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POPULAR COMMUNICATIONS

OCTOBER 1991 $2.95
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- We Review: The New Drake R8 Receiver
- High Adventure DX
- DX'ing Standard Time Stations

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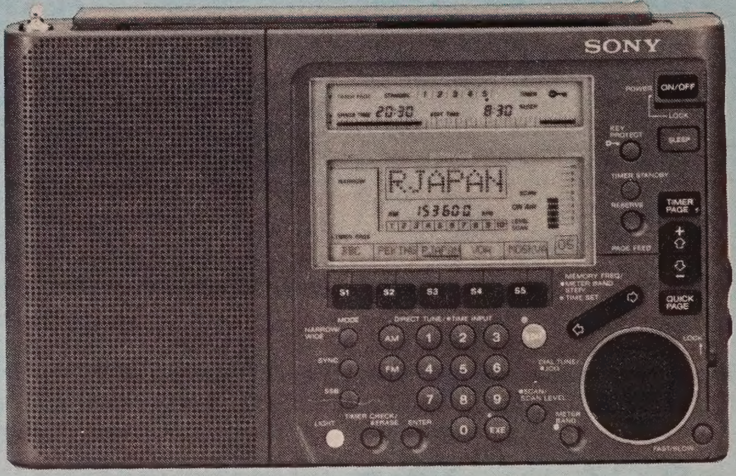

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- **Frequency:** FM 76.5-108 MHz LM/MW/SW - .15-30 MHz
- **Antenna:** Telescoping SW/FM Ferrite Bar LW/MW
- **Speaker:** 4 inch diameter •**Audio Power:** 500 MW 10% dist.
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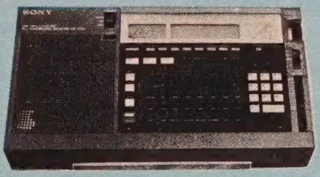

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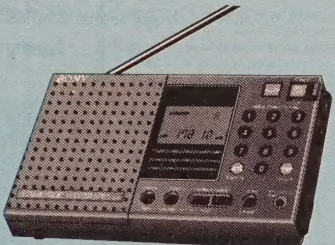

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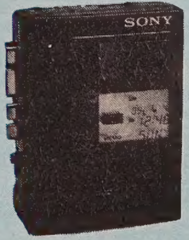

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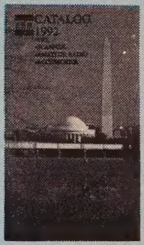

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***This month's cover:** California, USA: Antenna tower used for radio communications around the San Francisco Bay area. Photo by Larry Mulvehill.*

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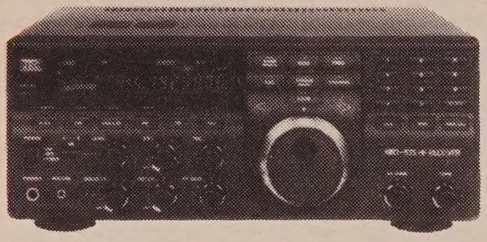

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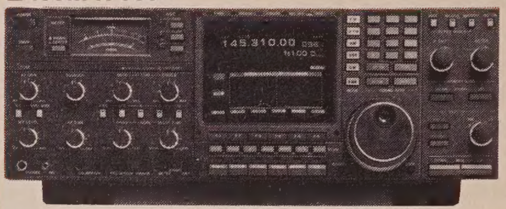

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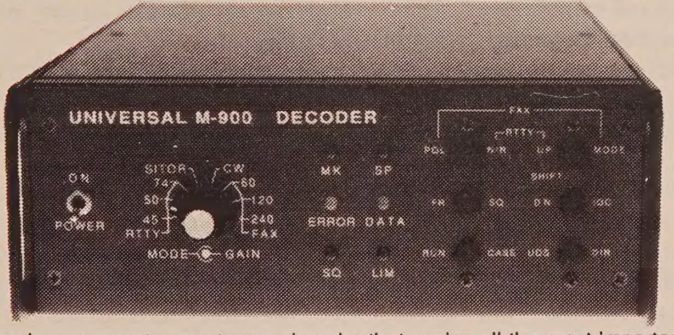

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- ➤ Cables for above

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BEAMING IN

BY TOM KNEITEL, K2AES

AN EDITORIAL

As a person who takes along a cellular when I'm on the go, I'm keenly aware of the advantages and disadvantages of trying to use one while roaming. With the nationwide cellular system growing so rapidly, places that don't have service one time, may well have it the next time you try.

Last year, I was heading southbound in Pennsylvania on I-81. After Harrisburg, I ran out of cellular service. On the Interstate, I found the cellular utterly useless through northwestern Maryland, West Virginia, and as far south as Winchester, VA, which was my final destination. This year, the cellular offered roamer service all the way to Winchester, which I assume is thanks to the system that went on line in Hagerstown, MD, located on I-81. The majority of my travel is in the northeastern states, and most highways do offer roamer service. This isn't the case, however, throughout the entire nation.

A letter from reader Cecil Wingard, of Stockton, CA made some good points in this respect. Cecil and his wife are both in their sixties, and are retired. When his wife had a flat tire and had trouble summoning help, he decided that it was time to buy a transportable cellular. In fact, when he and his wife plan trips to distant places, they take into account which routes and areas offer cellular service.

Once, not long ago, Cecil and his wife took Amtrak to visit relatives in Elko, NV. The train left them off late at night in Elko. There were no telephones at the deserted station; no attendant or ticket agent was on duty. Luckily, some strangers who were seeing someone off on the train, kindly offered Cecil and his wife a lift to town. Cecil thought the train station would have been a good place for him to have had his cellular bag phone, but he left it at home because he had been assured that there was no cellular service in Elko.

The next day, in Elko, he learned from a local communications shop that Elko does, in fact, have a cellular system. It has a single cell site, but it is fully operational. Cecil asked if the system would have accepted a call from his cellular, which is registered with PacTel. They told him no, that there is no roaming agreement between the cellular service supplier in Elko and the company with which Cecil's phone is registered.

Cecil observes that if the FCC is going to license the airwaves to companies providing a public service, then maybe something fell between the cracks—like really serving the public's needs. He makes the point that a properly registered and activated cellular should be assured, by FCC mandate, of being able to access at least one cellular service supplier in every area where cellular service exists. That, if there is only a single cellular system in a city, it can't refuse to accept any roamer calls. This would be in the interests of public safety and convenience, and is more important than other strictly commercial considerations.

I'd say that Cecil makes a good point here. Not all people with cellulars purchased them mainly for chatting with stockbrokers, bookmakers, or friends. Many people don't chat on them at all, but have purchased them primarily to be relied upon in the event of a road emergency, such as to summon a mechanic, medical help, police, or firefighters. These phones are ideal for this purpose, and in other tough situations (like the one Cecil and his wife faced at the deserted train depot), but only if a call can be placed from them.

Lots of cellular owners are people are getting along in years, or have health problems, or are otherwise unable to easily do things such as change a tire, or walk two miles for a gallon of gas.

For a person to need to summon such aid, but be prevented from doing so solely because one or both local cellular suppliers don't have a reciprocal business agreement signed with another supplier in a distant area is. . . well, it just doesn't seem right, especially when you consider that these service suppliers are supposed to be meeting the public's interest, convenience, and necessity.

With all of the noise the cellular industry has made about pushing the notion that cellulars are as secure as hardwired home telephones (the ECPA and that rot), we note with a smirk that they are strangely silent about whether cellulars are as convenient as a home phone. Can you imagine trying to place a long distance call from your home phone and being told that the called party can't be reached because the local phone company in that city has no reciprocal agreement with your hometown company?

What with more than 2-million cellular phones being sold last year in the USA, the FCC also should think about this the next time they revise their regulations governing cellular radio. It also makes a good case for considering the possibilities of using (non-cellular) IMTS radio telephones (see this month's *Telephone Enroute* column for information on IMTS).

Editor's Privilege

Don't ask why, but there probably isn't a single monthly column in our magazine that, for better or worse, at least several readers aren't absolutely convinced is secretly penned by yours truly under another name. At times, I've been either praised or denounced for "really" being just about everybody on our staff, including Gerry Dexter, Gordon West, and Harry Helms, despite the fact that these authors are all well known people in the hobby.

At an FCC hearing last year, one of the FCC people stated that, as Edward Teach, I write our pirate radio column (I don't). It will be noted that the FCC at least got the joke—Edward Teach was the real name of Blackbeard, the pirate! My beard hasn't been black in quite a while.

The most hilarious extreme: There's a West Coast fellow who puts out scanner frequency guides. For whatever reasons, he has spent decades going to some effort to conceal his real name and true identity, hiding behind a pseudonym. Ironically, he sends me a continuing and seemingly unending stream of long and tedious crank letters that often accuse me of secretly writing *POP'COMM's* book reviews under a pen name. And, you guessed it *(n'yuk n'yuk)*, with a straight face, he assiduously signs every one of those indignant letters with his made-up name!

In a way, it's flattering to learn that there are people who feel that the combined talents of an entire magazine full of well-known authors are within the scope of one person's abilities, knowledge, and available time. Few who ever worked at a national magazine and faced the numerous deadlines and production stages would ever give serious consideration to such a concept. Fact is, though, without the combined talents, expertise, and viewpoints of the best writing staff of any magazine in communications, there would be no *POP'COMM*. Sorry to be an iconoclast, but I admit to having the human failing of being enough of an egoist to tack my own byline on just about everything I write.

I should point out, however, that, like any editor, when it's absolutely necessary to do so, I can pinch hit an occasional "no byline" column for just about any section in my magazine. Since 1982, I have had to do that at least a couple of times for most of the monthly sections of the magazine, usually when those columns were in a transitional period while the regular curators were in the process of changing.

Now, however, it's my chance in the saddle again. I'm going to review a publication, and right here in *Beaming In*. It's not because of any staff change, but because I'm simply too perverse to entrust anybody else with pointing out its flaws. One of the best things about being the editor around this place is that I get to keep all of the fun jobs for myself.

The Electronics Industries Association

(Continued on page 76)

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CIRCLE 50 ON READER SERVICE CARD

MAILBAG

LETTERS TO THE EDITOR

Each month we select representative reader letters for our Mailbag column. We reserve the right to condense lengthy letters for space reasons. All letters submitted for consideration must be signed and show a return address. Upon request, we will withhold sender's name should the letter be used in Mailbag. Address letters to Tom Kneitel, Editor, Popular Communications Magazine, 76 North Broadway, Hicksville, NY 11801.

Cordless Phones

I enjoyed the June issue story about cordless phone monitoring. Although I live in an area where there aren't too many conversations to be heard, I still scan through this band several times per day. My neighbor has a cordless phone.

Bob B.,
Jeanesville, PA

You did no service to anybody with the cordless phone cover story in the June issue. People in my neighborhood know I have a scanner, and several are now accusing me of listening in on their phone calls. Thanks.

Harry McR.,
Ohio

I read with interest the article about cordless phones. I had always thought that the Communications Act allowed the monitoring of radio communications, but forbade the information from being used by or divulged to others. Wouldn't this prohibit the IRS, private detectives, and others from monitoring cordless phones in order to gather information?

Harry E. Chamberlain,
Alexandria, VA

Being unlicensed "incidental radiation" devices operated probably removes cordless phones from any protections granted under Section 705 of the Communication Act—Editor.

Cellular Costs

I found it fascinating to learn about the cost of cellular phone calls in your informative April feature. I'm in the U.S. Navy and after a recent trip to several nations in Asia, I have some information on the cost of using a cellular overseas. In Hong Kong, the monthly charge for having a cellular equals a few cents over US$6. Only international calls are billed. Why are cellulars in the US so expensive? I could see why hardwire phones are expensive because of the costs of constantly maintaining and repairing the lines. But cellulars use radio frequencies, so there aren't any lines to maintain. Should be much cheaper. Why do people put up with such a ripoff?

Troy L. Faulkner, KB9AZZ/NNN0FIC,
FPO, San Francisco, CA

Looking For A Club

As a beginner in international broadcast monitoring, I'd like to know if there is a club that I could join to get in contact with others who share my interest.

Bill MacKenzie,
Ottawa, ONT

Where can I get information on organizations that cover SWL'ing of overseas broadcasters and utility stations?

N. W. Carner,
Binghamton, NY

Please suggest a scanner group or news-publication of value. I enjoyed Tom Kneitel's comments on the Jane Robelot's WCAU-TV/10 special report on listening in on cordless telephones.

Frank Weston,
Wilmington, DE

Two fine SWL clubs are: The American Shortwave Listeners Club, 16182 Ballad Lane, Huntington Beach, CA 92649-2204, and also the Association of DX Reporters, 7008 Plymouth Rd., Baltimore, MD 21208. These groups have both long supported POP'COMM, and we are pleased to recommend them, in turn. Both groups accept members from all areas, and each has an excellent publication for its members. For scanner buffs, I've been well impressed with the Radio Monitors Newsletter of Maryland. They're at P.O. Box 394, Hampstead, MD 21074. If you write to any of these groups for information, please enclose either a greenstamp (US$1 cash) or a self-addressed, (US 29 cent) stamped, return envelope, or (if neither of those are possible) at least two International Reply Coupons (IRC's).—Editor.

QSL Opinion

I found your February issue "Mailbag" comments on QSL cards very interesting. I have been on 10 meter SSB since March 23, 1990. I have sent out 131 cards and received 101 in return. That means 22.9% did not reply, including some who may not have had sufficient time to return a card to me. I've only sent twelve SASE's and those were to 10-X members that I need for WAS. In every instance there had been a verbal agreement to exchange QSL's. In one case, I received a card ten months after sending my card. Some stations told me that they don't QSL, others demanded an SASE for a QSL. Are you a 10-X member?

Benjamin W. Staffer,
Monrovia, CA

Yes, my 10-X number is 52536. I QSL 100%.—Editor.

Mozart & Midway

Very often while I'm listening to my portable FM broadcast receiver, I hear aircraft communications cutting in right on top of the FM station. This seems worst while I'm listening to my favorite classical music station, WNIB on 97.1 MHz. What causes this?

Dr. Frank Parisi,
Chicago, IL

It's caused by insufficient image rejection in the RF stage of your receiver. The receiver uses a 10.8 MHz intermediate frequency (IF). What you're hearing are signals being sent out at twice the IF frequency, added to the FM broadcast frequency you're trying to hear. In WNIB's case, this turns out to be 118.7 MHz, which is one of the frequencies used by the Control Tower at busy Chicago Midway airport. It happens when the aircraft is close to your location and puts out a signal that is in excess of the image rejection capabilities of your portable receiver.—Editor

A Big Bang Out Of Our Editorial

In the February, 1990, *Beaming In* you mention the possibilities of communications via gravity waves. Maybe some people thought that was a radical concept, but actually it fits in with what's known about physics. Now, what do you think about communications via anti-gravity waves? I have a theory that I'd like your opinion on. I think that anti-gravity could exist if a black hole could be put into motion at or near the speed of light. It would take a cataclysmic event like a big bang to do this, but would not be mathematically or physically impossible because the matter inside a black hole might be able to create energy. What do you think of this theory?

Kevin Story,
Midland, TX

Sounds good to me.—Editor. ■

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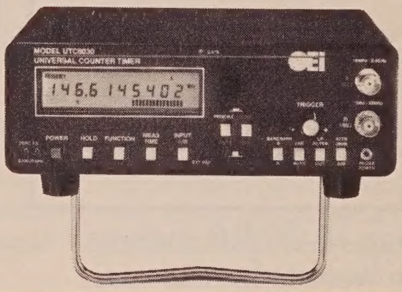

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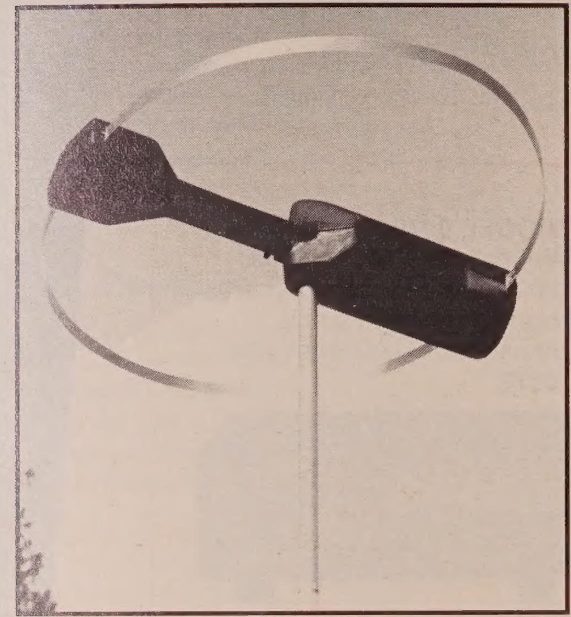

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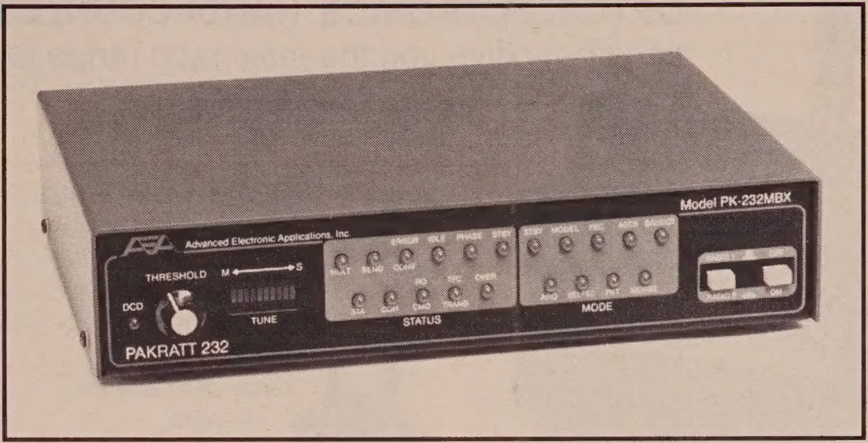
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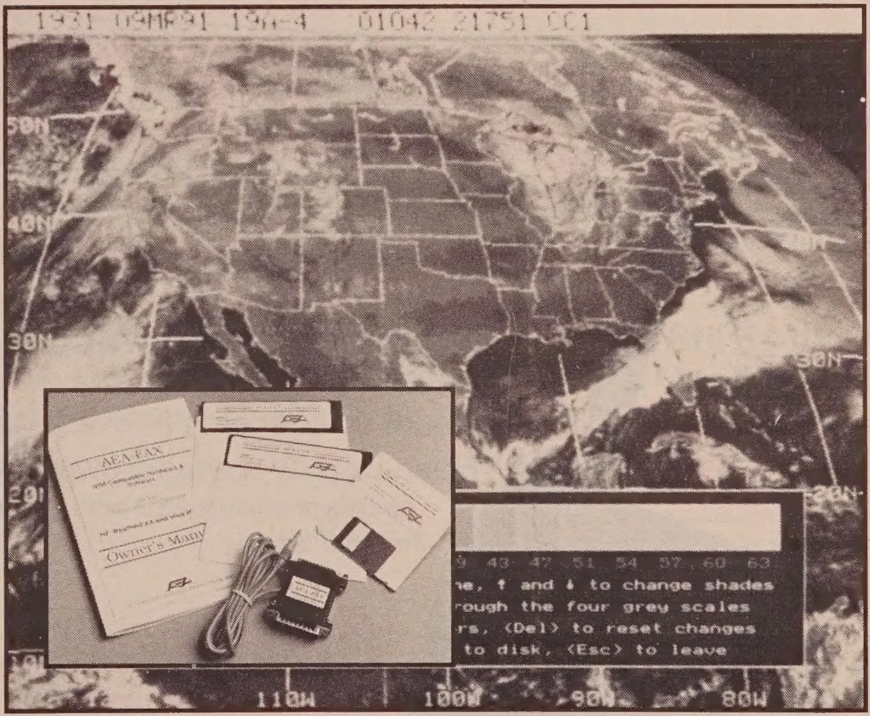
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CIRCLE 3 ON READER SERVICE CARD

SWL'ing's Real-Life James Bond!

The Amazing Michael Gurdus, The Man Who Turned His Monitoring Hobby Into His Profession—Plus Intrigue, Excitement, And A Niche In The TV Nightly News

BY GERRY DEXTER

The voice of the headphones was clear but faint. It was calling for help. When Michael Gurdus heard it he instinctively switched on the tape recorder.

The man on the radio claimed to be Archbishop Makarios of Cyprus, who just dropped in on a coup d'etat, but was now hiding from the new regime (which had declared him dead) and in fear of the claim becoming reality at any moment. Gurdus got the tape to the American Embassy in Tel Aviv where it was put through a voice analyzer and its authenticity confirmed. The Americans notified the British who sent a team to rescue Makarios from his hiding place in the small village of Phapos. Makarios later credited Gurdus with saving his life.

All the excitement was just another day at the office for the now 46 year old Gurdus. He spends nearly all his waking hours patrolling the ether in search of just such unusual events. Gurdus described himself to me as an electronic journalist. He gets his scoops without ever leaving home. Over the past two decades he's broken any number of stories of world importance and become something of a celebrity in the process.

Gurdus has worked as a journalist for Israeli Radio and TV for many years and supplies stories to other news organizations as well, all based upon information gleaned from monitoring the world's airwaves. The Israeli's call him Kasveyru, a combination of "our listener" and "our correspondent."

The fame isn't entirely welcomed by this tall, soft-spoken man whose nickname is Miki.

Gurdus' love for the journalism-radio monitoring combination comes from his father, Nathan, a Polish journalist who made a career out of monitoring shortwave broadcasts for their news content. As early as 1925 the elder Gurdus was listening to Eastern Europe stations as part of his job as correspondent for the *London Daily Express*. During the war he did his monitoring from Palestine, having escaped from his home in the Warsaw ghetto in 1939. Miki was encouraged and taught by his father and was soon compiling his own lists of broadcasts and military frequencies. "I want to combine my love for radio with my love for journalism," he says.

By the time he was in high school he was already tipping off Israeli news broadcasting to coups in other countries. His first big scoop came when he overheard Soviet aircraft loaded with missiles, enroute to Egypt. It was the first introduction of such weapons into the Arab world. Before Gurdus broke the story the information was known only to a handful of top government officials.

In 1977, Gurdus followed the flight of a hijacked West German plane, first to South Yemen and then to Somalia, all the while also tracking another West German plane with commandos aboard, ready to attempt a rescue when the hijackers landed. The hijackers had no idea they were being tailed in the air. Once again, Miki knew what was going to happen before it happened. Only this time, things got out of hand. When the hijackers landed in Somalia, Gurdus figured the rescue attempt would come at any moment and so released the story to Israeli Radio and TV for their next newscasts. But nothing happened. Miki made frantic calls to try to get the story held. He was successful with the radio people but the TV people put the story on the air, to the horror of the West German government. The Germans pleaded, successfully, for news agencies to put a lid on the story until the postponed rescue effort was underway. Fortunately, the rescue was a total success. Ever since that affair, Miki has had a policy of being doubly

News stories of worldwide impact have originated here, at the Tel Aviv listening post of Michael Gurdus.

sure releasing a story won't hurt anyone who might be in harm's way.

The radio shack in his Tel Aviv apartment is filled with shortwave receivers, scanners, tape recorders, television sets and RTTY decoding equipment. But the equipment isn't exotic. It's the same off-the-shelf brands sold by ham radio and SWL stores. The difference is the operator! The difference is in Miki's extensive knowledge about where to find particular transmissions. That, plus his nose (or ear) for news, his ability to put two and two together, his understanding of English, Russian, Arabic, Polish, French and German, to say nothing of the amount of time he spends at the dials - 10 hours a day on average, around the clock if something big is happening. At last count he had 10 shortwave and scanner radios. A satellite dish on the roof lets him monitor TV from around the world.

GURDUS
MONITORING
SERVICE

Gurdus' monitoring station.

His extensive knowledge of where to tune for what, combined with a journalistic sixth sense have led to scoop after scoop. During the Vietnam War, President Johnson made secret visits to the Pope and other heads of state—visits which weren't announced until after they'd taken place. But Gurdus knew about them through his monitoring.

On one occasion he caught transmissions from an American C-130 transport aircraft taking off from Cairo. That was the beginning of the doomed attempt to rescue the American hostages in Iran. Gurdus followed the entire operation on the radio. He listened as USAF personnel tried to make contact with four missing C-130's (one of which crashed). Gurdus located transmissions from all four of them. Gurdus knew of the mission's failure long before President Carter announced it to a stunned American public, but he held the story back. When he did release his story he provided his Israeli listeners with a complete description of the evacuation effort. The US State Department was not happy. Voices were raised complaining about the mission's lack of communications security and an official protest was lodged with the Israeli government, which rejected it.

The many hours Miki spends in front of his equipment leaves him little time for leisure activities. In fact, he rarely even leaves the apartment. When he does go out it is usually to the beach with his wife, Bilhah and daughters Keren and Tali, but even then a portable shortwave goes along. This year he took his first vacation in a decade!

Miki says there really isn't a lot involved in monitoring. Mostly it is constant listening and access to the massive frequency file he's built over two decades. "If you don't know them (the frequencies), finding something you really want is like looking for a needle in the sand," he says. That, of course, isn't

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CIRCLE 11 ON READER SERVICE CARD

Gurdus and wife, Bilhah, in the radio room.

news to anyone who tunes a scanner or a shortwave receiver. He has figured out the tactical code identifiers for hundreds of military communications stations and spends countless hours monitoring their frequencies. The main middle east air traffic frequencies are usually left on speaker all night, even while he sleeps!

In 1985, he heard the torturing of a hostage aboard a hijacked airliner on the ground at the Tehran airport. The hijackers intentionally left the plane's radio transmitter on and Miki could hear the screams. "It was the most terrifying thing I've ever heard," he says.

"In the middle east, most of the stations are government-run so a comment on the radio is usually the official position. If you monitor that and learn to analyze it you can forecast crises just by listening in," he notes. Thus, he checks the newscasts of the middle east stations, along with those of the BBC, Radio Monte Carlo and others. Often something heard on a newscast will send Miki off tuning the military or aeronautical frequencies in search of information about what's really happening. All it takes is a hint and, suddenly, the game's afoot, as Holmes would say.

Gurdus was first with news of the Israeli invasion of Lebanon and his reports during the early stages were often the only news available since the military had placed a news blackout and wasn't releasing information about the operation.

First word of the Israeli air attack on Syrian missile sites, the explosion which killed Lebanese President-elect Bashir Gemayel, the U.S. Sixth Fleet going on alert off the coast of Lebanon, Libya's invasion of Chad—all came from Michael Gurdus.

Miki often finds himself in the position of being the only source available on a story and, inevitably, that results in an apartment full of news people waiting for developments. On one occasion, he had to physically restrain an American reporter who tried to secretly record the transmissions coming into the Gurdus monitoring post.

There are times when his listening efforts aren't successful. In 1982, ABC-TV hired him to keep them abreast of developments in Falklands War. But the distance between Tel Aviv and the war zone was too great to pick up very much.

In 1974, Gurdus recorded an in-the-clear transmission from Air Force One taking President Nixon on a trip to the middle east. A staffer on the plane, using the codename "Clawhammer" was talking to someone back at the White House who was asking about how to handle a request to see certain tapes, kept in a White House safe. From the plane came the reply, "Don't let them even *see* the safe!" Gurdus later learned that "Clawhammer" was Gen. Alexander Haig. The incident was unfortunate for Haig who was in the middle of Senate confirmation hearing to become Secretary of State.

Early in the Iran-Iraq war Gurdus noticed increased air communications traffic between Libya and Iran. At the time, Iran Air did not have service to Libya. After several days of concentrated listening, Gurdus was able to report that Libya was sending about ten cargo flights to Iran daily and predicted that Iraq would retaliate in some way. The very next day Iraq severed diplomatic relations with Libya.

Iraq's next war was, of course, heavily monitored by Gurdus. He knew the Iraqis were going to invade Kuwait about seven hours before the tanks moved.

And he knew Operation Desert Storm was about to happen several hours beforehand, telling listeners in Israel that "climax is approaching." Once the war began, Miki fed constant reports to Israeli Radio and TV, mixing off-the-air sound with instant translations from English or Arabic, into Hebrew. Monitoring and reporting went on, virtually non-stop, throughout the war.

It's not all high drama, of course. In fact, most of the monitoring work is routine, ho-hum listening. Rather like it must be for a detective on a stakeout. No one knows when the next big story will happen. It may not be for months. Or it could be just seconds away.

When the big stories do break, when the airwaves are filled with drama, when tense, anxious voices fill the headphones, that's when Miki Gurdus hears history as it happens. ■

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California Skip Scanning

When You Hear California On Your Scanner, That's When The Magic Begins!

BY CHUCK ROBERTSON

Get ready for the coming winter DX scanning season by programming your scanner with sizzling California low band (30 to 50 MHz) frequencies. Then, let the sun shine in! I'll give you the favorite frequencies, as reported by scanner monitors across the USA and Canada—and that includes some exotic listening, too. Add a sprinkle of those dancing raisins, and *Eureka!*, you're all set to take a big bite of luscious Golden Gate monitoring.

California, Here I Come

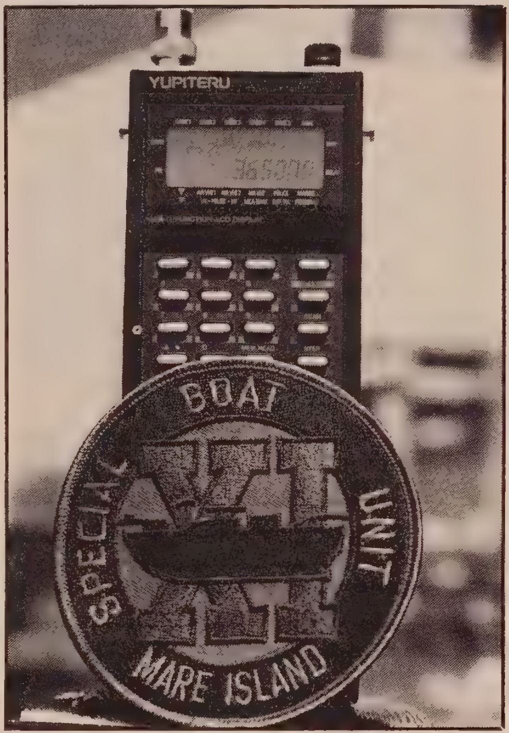
California has always been one of my prime DX targets, as I sit at my scanners halfway across the nation. During fall, winter, and early spring, I can log in its signals daily from morning until at least late afternoon. The Los Angeles Fire Department on its 33.70 and 33.84 MHz channels is a regular at my Illinois listening post.

And, whoa, California is the mother lode of illegal stations! These are shadowy individuals or businesses that operate unlicensed communications systems on unauthorized channels. They pop up in the strangest places and may remain entrenched there for extended periods. I like checking them out.

Sometimes I monitor a trucker bootlegging on 37.00 MHz. I've heard him there for years, and recognize his western drawl and distinctive voice. There's a full-duplex radiophone on 35.81 MHz with many California locations being mentioned. Still, I haven't figured out where it's located. I guess the FCC hasn't either.

Some high-rollers along some unspecified California freeway were monitored bootlegging on 31.10 MHz as they drove along warning one another about cops hiding behind palm trees and billboards. A Los Angeles wrecker service on 34.95 MHz and a plumber on 35.02 MHz are two more California bootleg systems I've intercepted several times.

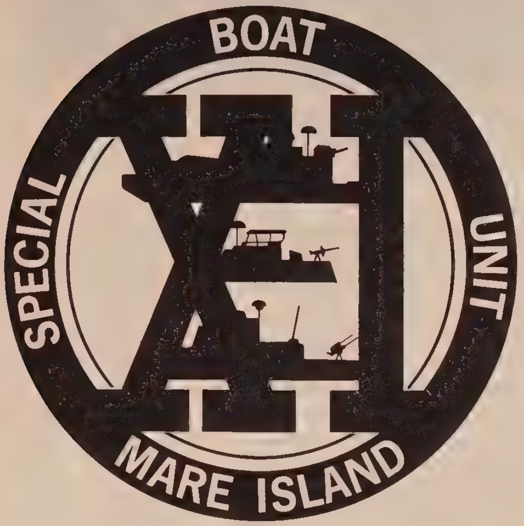
No shortage of fishing boats operating on unauthorized frequencies between 29.70 and 30.00 MHz. Listen for AM mode comms, especially on 29.875, 29.89, and 29.90 MHz. If you hear NFM mode or voice scramblers, those are most likely Canadian fishing boats operating in this band.



All tuned up and ready to monitor the California drug wars.

These Army comms vans, tents, and antennas are set up on a mountain top overlooking San Pedro, California. (US Army photo.)

An aerial view of the Army communications facility known as the Pleasant Peak Signal Site. It's located in Southern California. (US Army photo.)



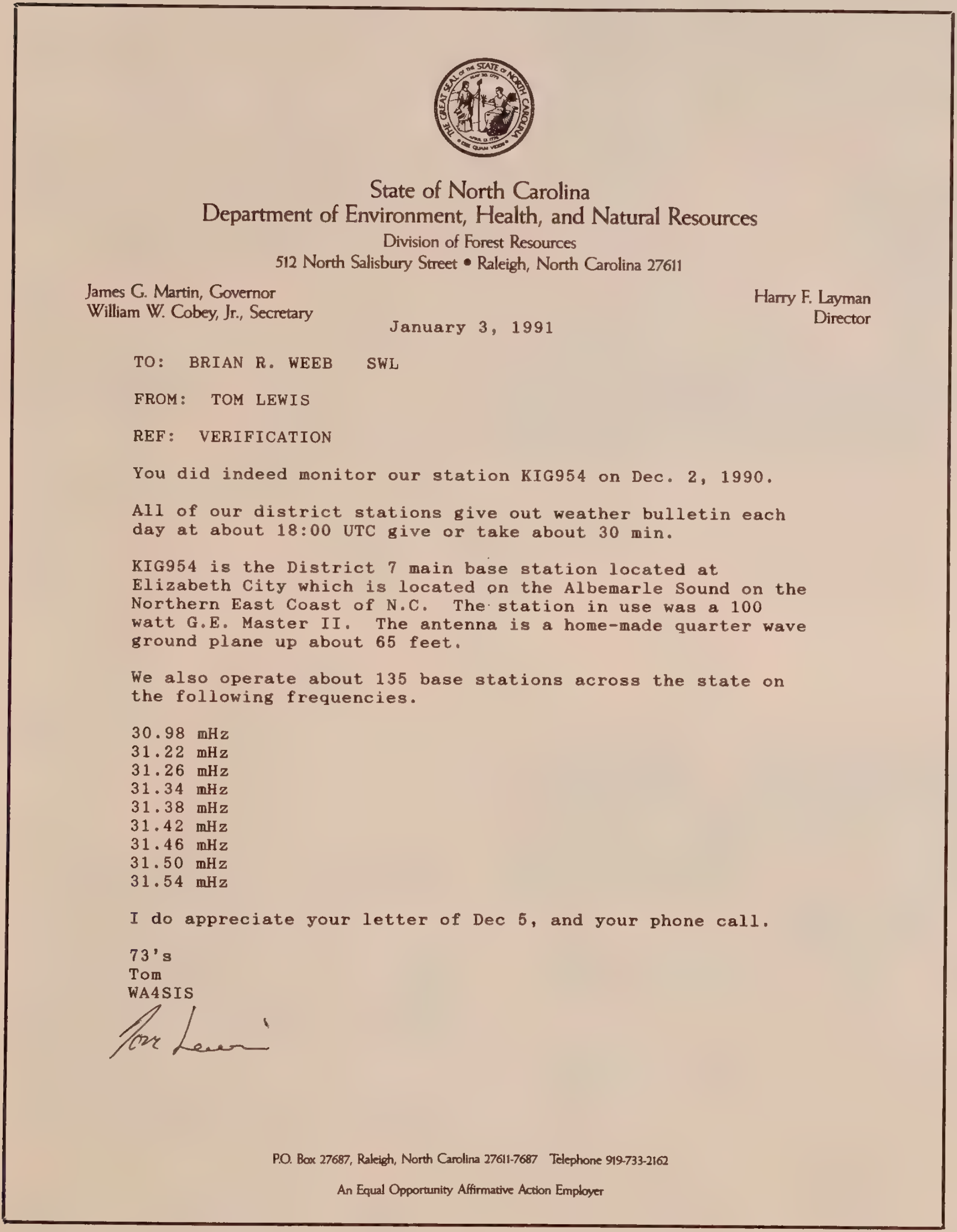
SBU-11, at Mare Island, California can be monitored on 30.15, 36.50, and 49.80 MHz. Skip reception brings them in from Macon to Montreal.

Of course, there are plenty of legit California stations also to be monitored, too. Check out our listing for best bets.

Drug Warriors

California is a major center for growing, processing. importing, and distributing illegal drugs. That gives you the opportunity to scan in on actual high-speed boat chases ending in boarding operations. This takes place on 35.50 MHz, with 30.15 MHz as a secondary frequency. These activities are from Special Boat Unit 11 (SBU-11), stationed at Mare Island Naval Complex. This is located in Vallejo, between San Francisco and Sacramento.

According to one of my correspondents who was a member of SBU-11, and who wishes anonymity, the SBU-11 Ops Office ID's as Chambers Gill. The Maintenance Shop uses the ID of Solar Lobster.



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January 3, 1991

TO: BRIAN R. WEEB SWL

FROM: TOM LEWIS

REF: VERIFICATION

You did indeed monitor our station KIG954 on Dec. 2, 1990.

All of our district stations give out weather bulletin each day at about 18:00 UTC give or take about 30 min.

KIG954 is the District 7 main base station located at Elizabeth City which is located on the Albemarle Sound on the Northern East Coast of N.C. The station in use was a 100 watt G.E. Master II. The antenna is a home-made quarter wave ground plane up about 65 feet.

We also operate about 135 base stations across the state on the following frequencies.

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31.26 mHz
31.34 mHz
31.38 mHz
31.42 mHz
31.46 mHz
31.50 mHz
31.54 mHz

I do appreciate your letter of Dec 5, and your phone call.

73's
Tom
WA4SIS

Tom Lewis

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Skip goes from California. It also arrives there. This QSL veri was sent to DX'er Brian Webb, of Thousand Oaks, for his reception of a North Carolina station on 31.46 MHz.

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Receive strong clear signals from all over-the-world with this 54 inch active antenna that rivals long wires hundreds of feet long.

"World Radio TV Handbook" rates the MFJ-1024 as "a first rate easy-to-operate active antenna ... Quiet with excellent dynamic range and good gain ... Very low noise factor ... Broad frequency coverage ... the MFJ-1024 is an excellent choice in an active antenna."

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The MFJ-959B provides proper impedance matching so you transfer maximum signal from your antenna to your receiver from 1.6 to 30 MHz. You'll be surprised by significant increases in signal strength.

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CIRCLE 12 ON READER SERVICE CARD

California's Best Bets

29.71: "Frisco Base," Fryar Logging Co., 8 mi. w. of San Francisco. In EE & SS.

30.35: "Long Rifle," Camp Pendleton, CA.

30.66, 30.74, 31.06, 31.14, 44.54: San Francisco municipal buses.

30.76: "Hangar Base," Brent Air Towing, LA & San Bernardino.

31.16: Super Car Svc., busy taxi svc. in North Hollywood.

31.20: Hollywood Patrol, Inc., Hollywood.

31.24: Jim's Emergency Road Svc., Camarillo. Piercing tone on base transmissions.

32.10: Ft. Irwin Observer Controllers: Scorpiom, Cobra, Tarantula.

32.85: "Bearmeat," Twenty-Nine Palms USMC.

33.10: Service Search & Rescue, Burbank.

33.48, 33.86, 33.90: LA Fire Dept, Digicom tones.

33.70, 33.82: "OCD," LA Fire Dept.

34.50: "Hamilton Advisory," Hamilton AAF.

35.10: Baker Protective Svc., LA & Culver City.

35.88: Thousand Oaks Cab Co., Thousand Oaks.

36.15: "Seal 1," USN Coronado Amphibious Base.

36.60: USN ops in SF Bay area: Treasure Island Landing, Alameda Fleet Landing, Orrfish 895, etc.

37.20: LA County law enforcement.

38.90: Camp Roberts AAF, air/ground.

39.24, 39.36, 39.52: Marin Co. Sheriff.

39.98: LA County Smog Alerts. Listen 10 a.m. Pacific (1800 UTC) for reports. Tones, report, & then more tones.

40.10: CA National Guard, Hunter-Liggett.

41.70: Twenty-Nine Palms USMC, ground control.

42.00: O'Sullivan AAF. San Luis Obispo. National Guard ops.

42.02 to 42.94: CA Highway Patrol

42.96: MTZ Security Patrol, Stockton.

43.00: Investigation Svc., San Francisco.

43.44: Korbel Winery, Santa Rosa.

44.20: Brinks, Inc., Sacramento.

45.14, 45.40: LA Harbor Patrol.

45.70: San Diego Co. law enforcement.

46.06: Active FD channel, many departments.

47.46: Barstow Desert Rescue.

47.50: LA Civil Defense.

48.45: Ft. Irwin NTC live fire control.

49.05: Bicycle Lake AAF advisory (secondary channel). Primary= 32.45 MHz.

49.58: San Clemente Rancho, Inc., Monterey,

56.50, 56.65, 61.00, 72.00: Ft. Irwin war games.

DX Monitored In California

Brian Webb, of Thousand Oaks, CA logged the stations listed here. He uses a PRO-2020 scanner & 2 horizontally polarized dipoles, one cut for 32 MHz, the other for 35 MHz.

30.00: Mexican mil net; Guadalajara(?).

30.15: US mil, location unknown. M-68 to M-68-O, "People need to be fed. They haven't had lunch, either."

30.545: Radiophone in SS, maybe Mexico. "Be careful what you say, someone may be listening." The other person answered, "There's nobody listening."

30.70: Odeco Oil & Gas Co., Dulac, LA & Gulf of Mexico, "256 Dulac to the Crimson Tide."

30.76: Mexican business, Mexicali.

30.82: WZY231 in CW., Port Authority of Allegheny County, PA.

30.96: "Tampa Base," of Sunbelt Sales & Rental, FL.

30.98: KGB812, SE Pennsylvania Transportation Authority.

31.00: Agway Energy Products, Middletown, NY.

31.06: Louisiana State Conservation Police.

31.35: Radio Aviso, Avenida 18 Julio 1385, Galeria City Hall, Montevideo, Uruguay.

31.46: N. Carolina Conservation Police.

31.48: Gulf Fleet Marine Corp, Harvey, LA working vessel 69 in the N. Atlantic.

33.02: Polk Co. Animal Control, FL.

33.18: "Leeville Base" (Chevron Oil), LA.

33.20: Work Boat Bernie G., Gulf of Mexico.

33.375: A communal farm in Cuba.

33.38: "Maintenance Coordination" base, Argentina.

33.44: Cherokee County Fire Dept., GA.

34.48: Maybe a taxi service in Sao Paulo, Brazil. Dispatching in Portuguese to locations that appear to be in that city.

35.14: Cook's Pest Control, Shelbyville, TN.

35.28: Voice pager, Argentina.

35.34: Radio pager in New Berlin, WI.

35.64: Radio pager KTS543, Chicago, IL.

37.12: Radio pager in Argentina. Also called for "Antarctica" base.

37.30: Michigan State Police, Brighton.

38.96: Comms in a Slavic language.

39.45: Cuban Tourism Council. The 3 bases= Control, Iguana, & Hotel.

40.05: Voice scrambler in use.

43.58: Radio pager (voive) KUS349, in VA.

SBU-11 patrol boats use simple alphanumeric ID's like Alpha 1 and Delta 2. A vessel ID'ing as Outrage has also been monitored.

There are three types of drug war ops in which SBU-11 participates. First, are ops involving the US Coast Guard. A USCG officer is always aboard every SBU-11 vessel and is required for the authority to undertake search and seizure operations. In accordance with USCG terminology, these are called "Legal Ops."

The patrol area includes the local Pacific Coast, San Francisco Bay, San Pablo Bay, and nearby inland waterways.

Then, there are ops involving law enforcement officers (or "LEO's"). These are usually conducted in a smaller geographic area such as Marin County, with sheriff's deputies aboard. These activities are code named "Drug Ops."

The third category of narcotics intervention is called "Dark Ops." This includes collecting intelligence on electronic emissions, acoustic signatures of the engines and props of suspect vessels, heat signatures and infrared photo analysis (gathered by boats and by Army helos). The infrared gear is highly classified, but it is known to be used in spotting indoor and hidden outdoor marijuana cultivation areas, also for locating suspect boats and vehicles in the dark.

When SBU-11 isn't actively involved with drug war ops, the 36.50 MHz channel is active for training, maintenance, and general base comms.

Comms equipment primarily consists of the AN/VCR-46, synthesized in 50 kHz steps and operational from 30 to 76 MHz. These radios are used for boats, mobiles, bases, and even repeaters. The comms on 36.50 MHz is repeated on 49.80 MHz by two VCR-46's located at an Army Corps of Engineer facility on Mt. Vaca (near Sacramento).

Some AN/URC-94's are also in use. These synthesized transceivers can operate SSB, AM, and FM in 100 kHz steps from 2 to 76 MHz. Active HF channels used by SBU-11 include 5426, 6512.5, 8476, 10448.5, 11113.5, and 12118.6 kHz.

Boats can operate in the UHF aero band, and have marine band handhelds which are usually run on 157.025 MHz. On at least one occasion during an actual operation, CB radios were used as backup comms units. Hide in plain sight!

The Old Gray Mare

Mare Island is also said to be home to the West Coast's only nuclear-capable shipyard. This means that nuclear powered subs

Some Excellent USN Low Band Channels

30.15	Special Warfare
30.54	USN MARS
32.05	
32.06	USN MARS
32.43	
34.15	
34.30	USN MARS
34.53	
45.54	
34.55	
34.65	USMC use
34.74	
36.13	
36.14	USN MARS
36.50	Special Warfare
36.53	
36.54	
36.55	
36.56	
36.57	
36.58	
36.60	
36.86	USN MARS
38.25	
38.28	
38.30	
38.31	
38.34	USN MARS
38.40	
38.70	USN MARS
38.93	
40.10	USN MARS
40.14	USN MARS
40.40	
40.41	
40.53	
40.77	USN MARS
40.78	
40.79	
40.83	
41.09	
41.10	
41.11	
41.30	
41.30	
41.35	
41.55	
41.89	
41.90	
41.93	USMC use
46.60	USN Reserve
49.80	Special Warfare

and surface vessels can be refueled there. The SBU-11 boats play a part when "special cargos" are being transferred.

I've monitored what sounds like fireboat comms from Mare Island on 36.57 MHz. Also try 36.53, 36.63, and 36.87 MHz. These are all used by handhelds, so signal levels vary widely.

In fact, check throughout the 36 MHz band for USN comms in California (and all up and down the West Coast), as this is a favorite band used by the Navy. There are numerous commands at Mare Island, including Guided Missile School, the Engineering School, and the super-secret Cypher Repair building that has no windows.

Works Both Ways

Scanner listeners located in California are on the receiving end of an enormous amount of incoming DX. Not long ago, I heard from Brian Webb, of Thousand Oaks, CA. An old hand at low-band DX'ing, Brian's racked up some really good catches. One of his more interesting experiences was a phone call veri from Radio Aviso, a radiopager in Uruguay on 31.35 MHz. Brian phoned the station and played his tape of the station for the receptionist, who recognized the voice as one of their dispatchers.

Here Comes The Skip

Regardless of where you live, there will be lots of scanner skip this winter. But, remember, F2 layer skip has a minimum skip distance of about 1,000 miles. If you live closer to California than this, you may not hear stations there.

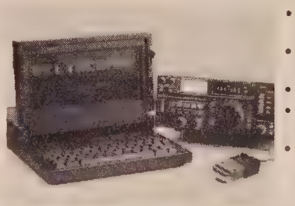
Solar Cycle 22 has peaked out. It's not going to get any better than it's been, and it's going into a slow decline. This winter the maximum usable frequency (MUF) will average out a bit lower than it did last winter. Check the 29.70 to 35.00 MHz band first.

Still, despite being on the downslope of the solar cycle, I expect that there will be VHF low band DX to be heard every day during the season. If you're interested in monitoring scanner comms from across the USA and Canada, and around the world, your big chance is coming up. Don't just sit there and let it pass you by. The next solar cycle won't peak until around the year 2000!

ICOM™ R7000 Sweeping 1300 Channels/Min.

DELTACOMM™ 1.04 gives you a custom interface and optimized software that will not just control but will maximize the potential of your R7000. Spectrum log at speeds in excess of 1300 channels/min. while automatically generating a histogram of frequency/activity. Advanced priority channel monitoring and program control, by channel, of remote tape recorders during scanning. Here are a few (there are many more) examples of the advanced features DELTACOMM has to offer:

- Birdie log during frequency search automatically characterizes your R7000, then locks out those frequencies.
- Auto histogram and scan file creation during spectrum log.
- Scan file channel lock-out feature allows scanning around channels without removing that frequency from database.
- Resume scan and maximum monitor values unique on each channel scanned.
- Each frequency within a scan file has an area (40 characters wide) for channel information.



- Auto frequency detection and storage during search and spectrum log.
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- On-screen HELP reduces need to refer to user manual.
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CIRCLE 80 ON READER SERVICE CARD

Radio Remembered

A Leisurely Stroll Through Radio & Wireless History

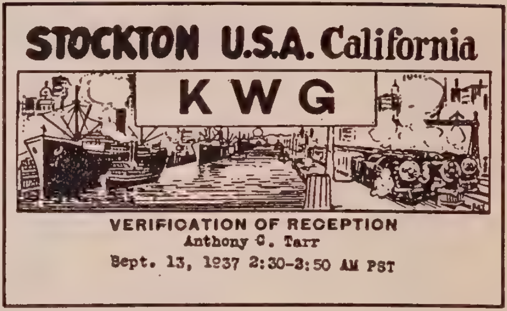
BY ALICE BRANNIGAN

Among the first group of broadcasters to become licensed was station KWG, Sacramento, California. Although the station's license was issued on December 7th, 1921, the station seems to have been operating for more than two weeks before the official documents were issued.

This was a 50 watt station on 833 kHz, licensed to the Portable Wireless Telephone Company, of 530 East Market Street. By 1928, KWG was picking up momentum and running 100 watts from 902 Commercial and Savings Bank Building. In November of '28, the government shifted KWG over to 1200 kHz, where it shared time with Oakland's KLS. Soon after, KWG changed its frequency to 1200 kHz, and moved into the Medico Building.

By the early 1930's McClatchy Newspapers had bought KWG and was running the station. McClatchy eventually moved KWG's offices into the Hotel Wolf, and its studio/transmitter to East Weber and North "E" Streets. Two 150 ft. pole masts were erected to support a single wire "T" antenna. The power was increased to 250 watts, and in early 1941, KWG shifted over to 1230 kHz.

In 1955, KWG was sold to Delta Broadcasting (Lewis B. Saslaw and James Longe). A year later, the licensee was Western Broadcasting, Inc., followed in 1957 by KGW Broadcasting, Inc. (Robin Hill). In 1958, KWG was again sold, this time to Frank Axelson and O.R. Reighenbach. But, by 1958, the owner had become Hale Bondurant, followed a year later by KMO Broadcasting, Inc. After that, it was owned by Royal Bear Broadcasters, Inc.



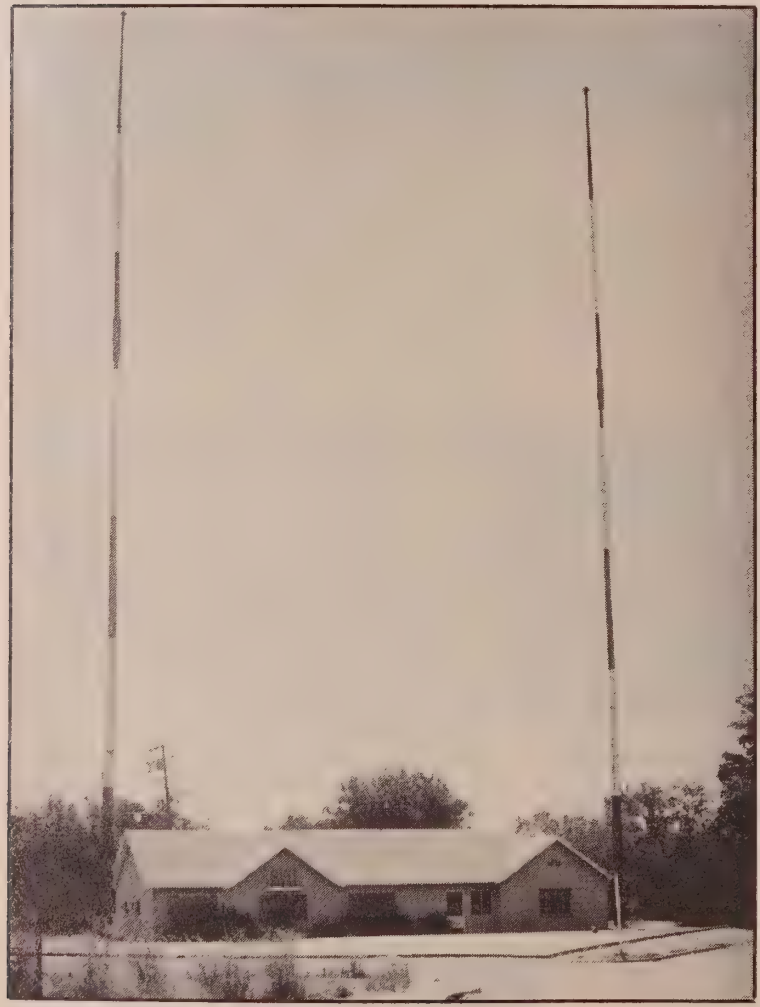
STOCKTON U.S.A. California

KWG

VERIFICATION OF RECEPTION
Anthony C. Tarr
Bept. 13, 1937 2:30-3:50 AM PST

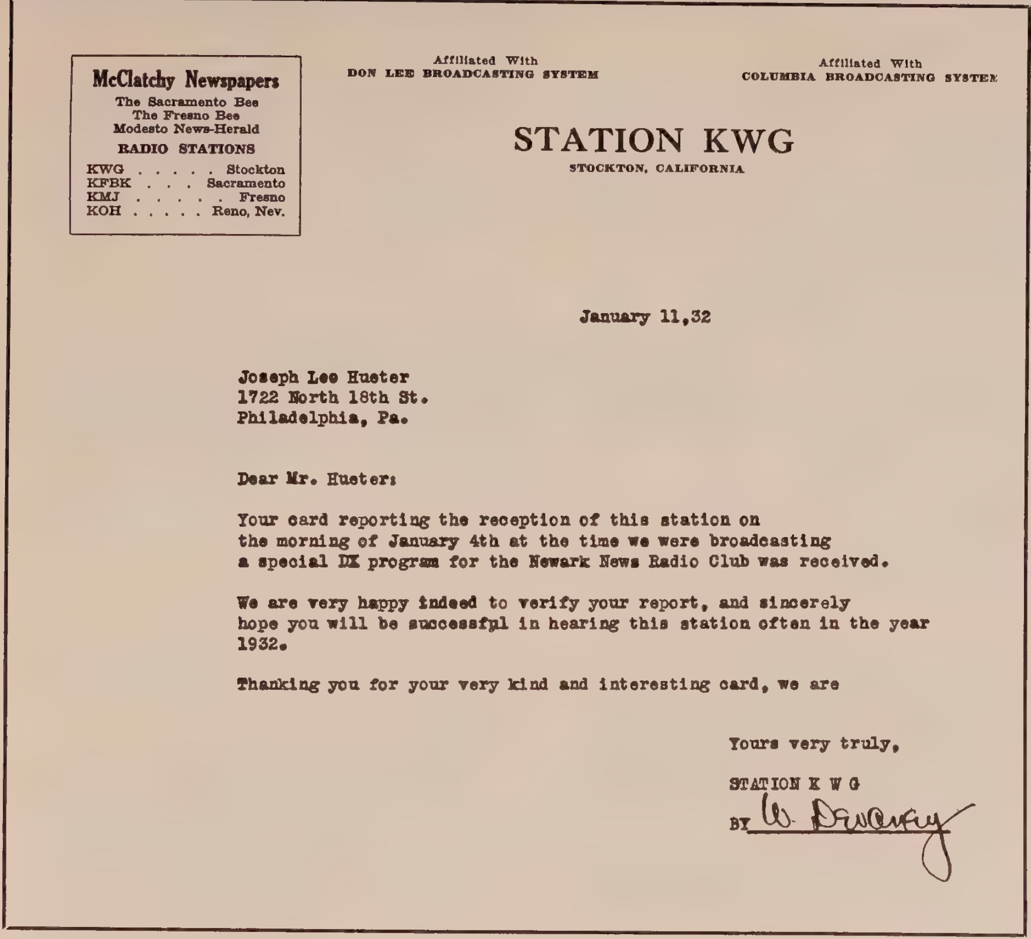
By 1937, KWG was sending out this QSL card.

Since 1983, KWG has been owned by



A photo of the KWG transmitter site taken on September 9, 1971, showing the two 150-ft. pole masts. (Courtesy Jan Lowry, CA.)

Closer view of the KWG sign on the transmitter building, as it looked twenty years ago. (Courtesy Jan Lowry, CA.)



McClatchy Newspapers
The Sacramento Bee
The Fresno Bee
Modesto News-Herald
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KWG . . . . . Stockton
KFBK . . . . Sacramento
KMJ . . . . . . Fresno
KOH . . . . . Reno, Nev.

Affiliated With
DON LEE BROADCASTING SYSTEM

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STATION KWG
STOCKTON, CALIFORNIA

January 11,32

Joseph Lee Hueter
1722 North 18th St.
Philadelphia, Pa.

Dear Mr. Hueter:

Your card reporting the reception of this station on the morning of January 4th at the time we were broadcasting a special DX program for the Newark News Radio Club was received.

We are very happy indeed to verify your report, and sincerely hope you will be successful in hearing this station often in the year 1932.

Thanking you for your very kind and interesting card, we are

Yours very truly,

STATION K W G

BY

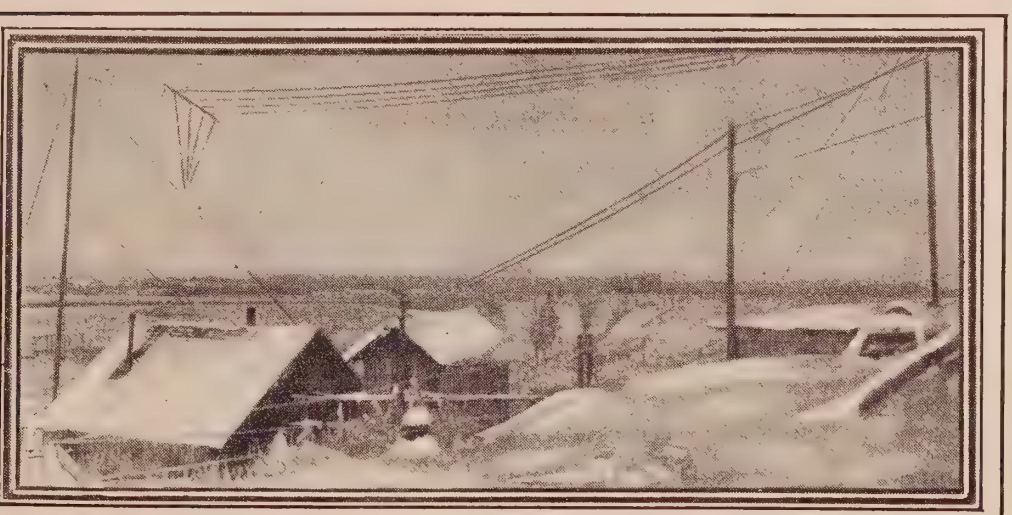
This 1932 veri letter from KWG shows its operation by McClatchy Newspapers, although we have seen some sources that claim McClatchy didn't take over until several years later than this. (Courtesy Joe Hueter, PA.)

Central Valley Communications. The station runs an oldies format with 900 watts on 1230 kHz. The transmitter is still at East Weber and North "E" Streets, although the studios have been moved. A church occupies the part of the KWG transmitter building that was once the studios. At age 70, KWG is California's oldest continuously licensed AM station.

Two excellent photos of the KWG transmitter site as it looked in September of 1971 were sent to the magazine by Jan Lowry, of Malibu, CA.

Outfoxed

Let's not forget that early wireless had many applications. We came across one that is an excellent example. That was sta-



The antenna systems at station KZY, a two-way station located on a fox farm in Alaska during the 1920's. The Alaskan frontier was one of the first places that realized the many uses for two-way radio when the nearest civilization was a few days away.

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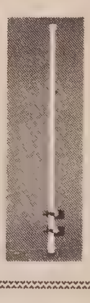

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TS-1 $60
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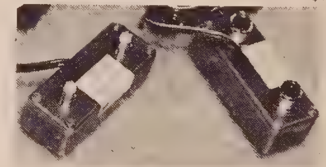
Listen to an entire nights scanning while driving to work! Interfaces scanner to your tape recorder for ACTION ONLY recording.

SIGNAL INTENSIFIERS
Make your antenna come to life!
RFP-40 0.5-2000 MHz! 15 DB GAIN! $70



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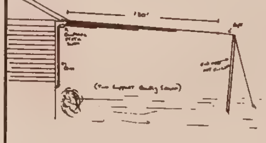

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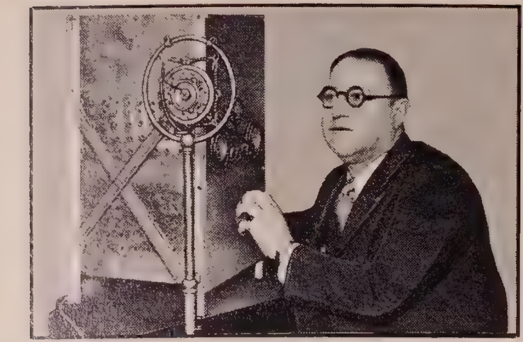


Dr. Sydney N. Baruch, shown in 1931 with his narrow band transmitting apparatus. A magazine claimed it sent out voice transmissions, yet required "less than a one-cycle channel for tests, as it creates no sidebands in the ether." We'd want to see this in action to believe it, wouldn't you?

tion KZY, licensed to F. W. Williamson, of Kusilof, Alaska. This is a lonely settlement on the Cook Inlet side of the Kenai Peninsula. Anchorage, the nearest populated area of any significant size, is ninety miles away.

In the mid-1920's, Williamson owned one of the largest fur ranches in Alaska. He also owned what may have been the only wireless station operated on a fox farm in the USA.

Two antennas were installed at the facility, one for KZY, and the other a 150 ft. double longwire used for general radio receiving. It was up about 60 feet, with one end attached to the house and the other to the mast. The receiver was a five-tube Grebe *Synchophase*. When it was in use, all other electrical devices on the farm were switched off to eliminate static, buzzes, and other radio noises they generated.

Winter evenings called for the Williamson family to have their supper at 4 p.m., which corresponded with the 6 p.m. concerts from San Francisco or Seattle they wanted to hear. The broadcasts could easily be picked up in Alaska, at loudspeaker volume.

The KZY transmitter was under the control of a licensed radio operator who lived at the fox farm and was in Williamson's employ. He might have had some secondary duties since his radio operating duties at KZY took fifteen minutes per day, which is only two hours a week.

Why was KZY needed? During winter, the mail came through only once a month, and that was by dog sled. Being in the commercial fur business, Williamson required faster, newer, and more reliable information than could be obtained by mail. KZY, which was authorized on 333 and 500 kHz, kept him in contact with the outside world, via Anchorage, where he could get the latest fur prices from the New York auctions, and also exchange information with his agents in several major cities.

The radio was also there for emergencies, like the time in the spring of 1926 when KZY was used to summon a physician from an area cannery to attend the birth of a child to a family living at the Williamson compound. One summer, a vital engine at the farm broke down and parts were needed. The radio was used to contact Anchorage to see if parts could be rushed in from the local machine shop. Anchorage was out of stock, but they wired the order on to the distributor in Seattle. Williamson had his parts in only fifteen days. Doing it by mail would have taken forty days.

Whither Fidelity?

Boaz Silva, a reader in Key West, FL sent us a dozen precious old copies of *Science and Invention* magazine for the archives here. He directed our attention to an item on page 138 of the June '31 edition and asked if we had any further information and wonders if the item is "for real."

That page revealed a story about a new development in the field of radio. It complained that there were so many broadcasting stations crammed on so few frequencies that it was almost impossible to hear only one station at a time, even with 10 kc/s (kHz) separating each broadcasting channel.

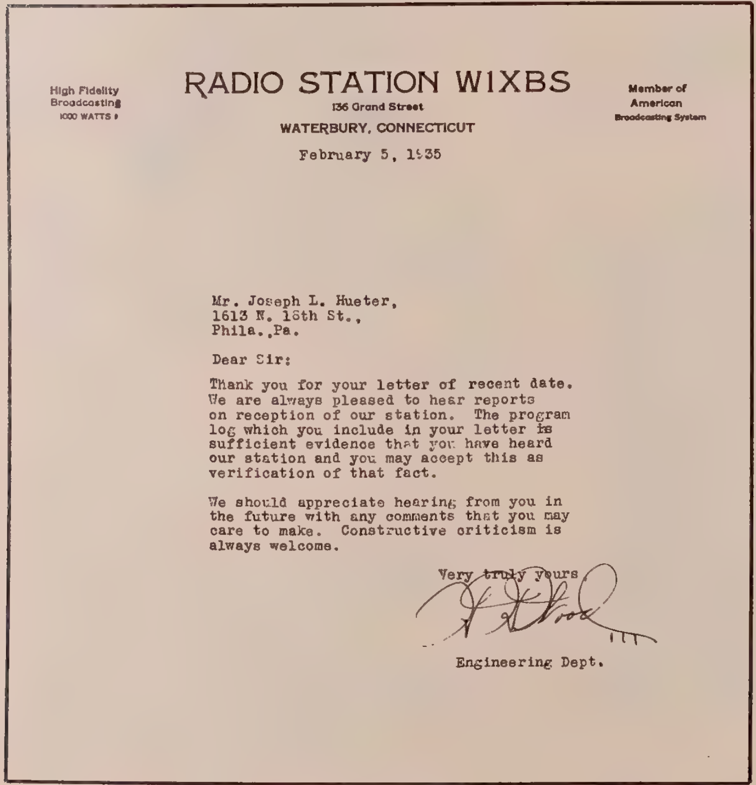
Dr. Sydney N. Baruch, described as a "New York experimenter" is mentioned in this connection as having perfected a "radio transmitter which he feels will permit two broadcasters to operate within a few cycles of each other without interference. He claims its use required less than a one-cycle channel for tests as it creates no sidebands in the ether."

Well, the story does appear to be serious. But, no, we have no information on this invention and its possible fate. We can't possibly imagine the quality of the sound being transmitted over a system like the one described or how a voice or music could be shoved through a narrow bandwidth less than 1 Hz wide. If any readers know more about this invention or its inventor, let's hear from you.

Dr. Baruch's invention actually is a fine lead to the letter received from David R. Brainard, Lakewood, OH.

How Hi The Fi?

Dave Brainard wrote to observe that the sales literature for the 1937 McMurdo Silver



High Fidelity
Broadcasting
1000 WATTS

RADIO STATION W1XBS
136 Grand Street
WATERBURY, CONNECTICUT

Member of
American
Broadcasting System

February 5, 1935

Mr. Joseph L. Hueter,
1613 N. 18th St.,
Phila.,Pa.

Dear Sir:

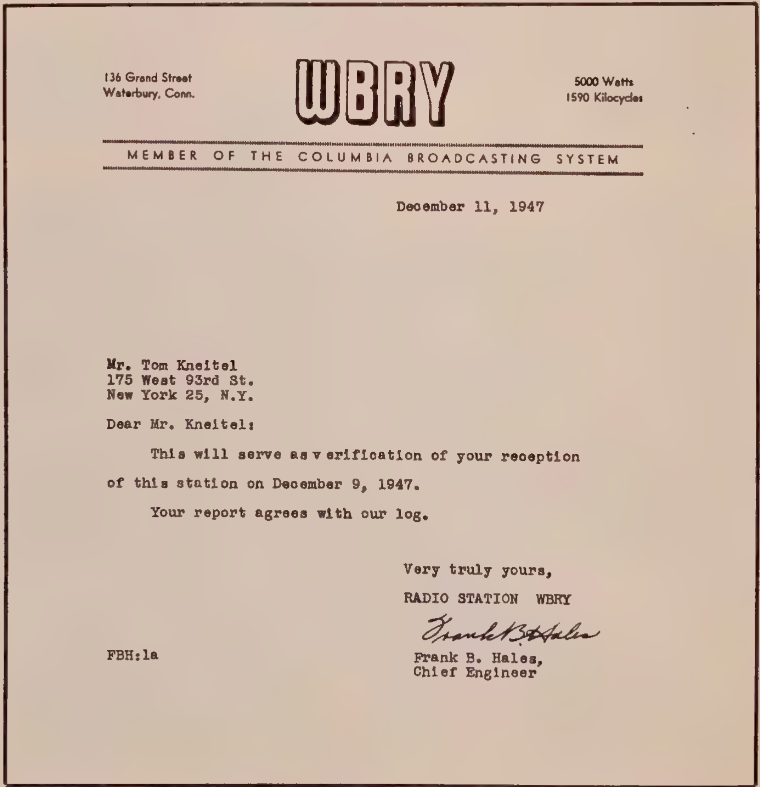
Thank you for your letter of recent date. We are always pleased to hear reports on reception of our station. The program log which you include in your letter is sufficient evidence that you have heard our station and you may accept this as verification of that fact.

We should appreciate hearing from you in the future with any comments that you may care to make. Constructive criticism is always welcome.

Very truly yours

Engineering Dept.

W1XBS was one of the four designated AM high fidelity stations established in the 1930's. (Courtesy Joe Hueter, PA.)



136 Grand Street
Waterbury, Conn.

WBRY

5000 Watts
1590 Kilocycles

MEMBER OF THE COLUMBIA BROADCASTING SYSTEM

December 11, 1947

Mr. Tom Kneitel
175 West 93rd St.
New York 25, N.Y.

Dear Mr. Kneitel:

This will serve as v erification of your reception of this station on December 9, 1947.

Your report agrees with our log.

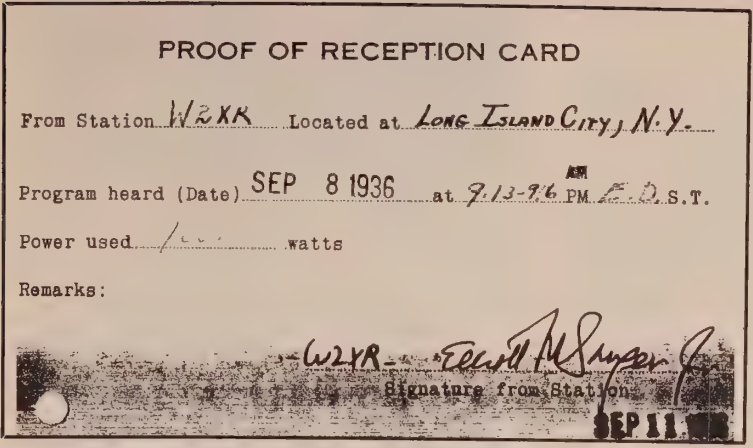
Very truly yours,
RADIO STATION WBRY

Frank B Hales

Frank B. Hales,
Chief Engineer

FBH:la

WBRY was the station W1XBS became when it ended its experimental phase. (Courtesy Tom Kneitel, NY.)



PROOF OF RECEPTION CARD

From Station W2XR Located at Long Island City, N.Y.

Program heard (Date) SEP 8 1936 at 9.13-9.16 AM PM E.D. S.T.

Power used 1 watts

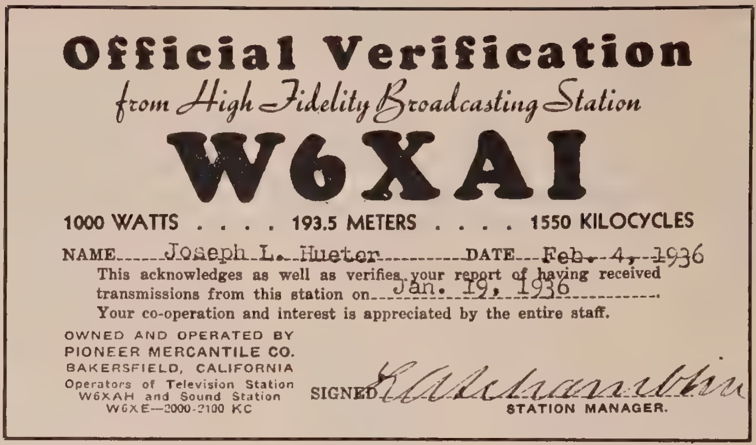
Remarks:

-W2XR- Edward M Snyder Jr.

Signature from Station

SEP 11

New York City's AM high fidelity station was W2XR, which evolved into WQXR, famous for its classical music programming. (Courtesy Howard Kemp, Laconia, NH.)



Official Verification

from High Fidelity Broadcasting Station

W6XAI

1000 WATTS . . . . 193.5 METERS . . . . 1550 KILOCYCLES

NAME Joseph L. Hueter DATE Feb. 4, 1936

This acknowledges as well as verifies your report of having received transmissions from this station on Jan. 19, 1936.

Your co-operation and interest is appreciated by the entire staff.

OWNED AND OPERATED BY
PIONEER MERCANTILE CO.
BAKERSFIELD, CALIFORNIA
Operators of Television Station
W6XAH and Sound Station
W6XE—2000-2100 KC

SIGNED

STATION MANAGER.

The West Coast AM high fidelity station was W6XAI, in Bakersfield, CA. (Courtesy Joe Hueter, PA.)

Masterpiece VI deluxe receiver contained an interesting reference. It noted that this receiver offered reception of the new 31.1 to 40.0 MHz "Apex" band. It went on to describe the "Apex" band as being devoted to local stations transmitting "ultra high fidelity" audio signals. Although the literature pointed out that this band had not yet become fully active, it claimed high fidelity stations were already broadcasting in New York, Detroit, Buffalo, Philadelphia, and Kansas City. These were, of course, the days of AM radio, before FMcasting came along.

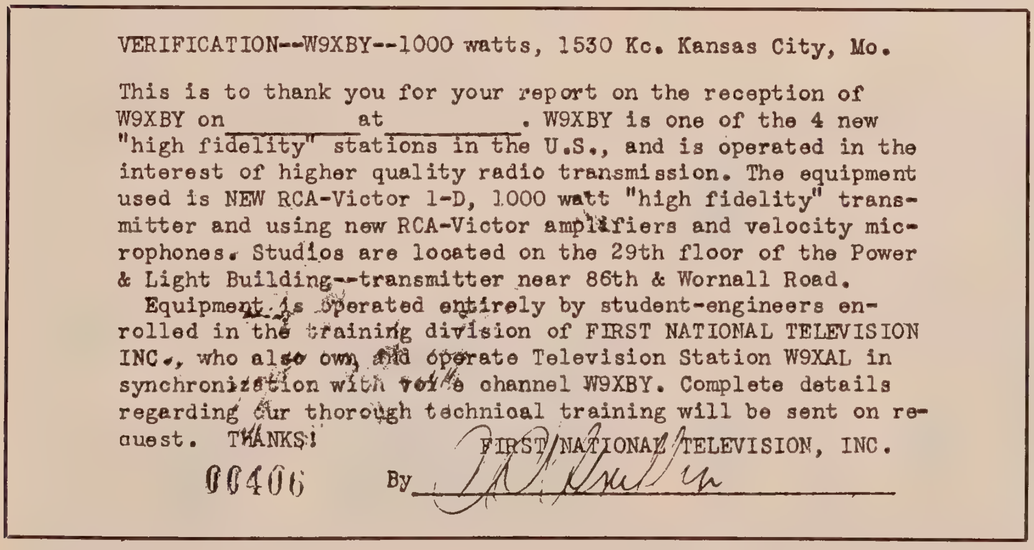
Noting that McMurdo Silver was not above stretching or bending the truth at times to make a sales point, Dave wonders if we ever heard of the alleged "Apex" band, or high fidelity AM broadcasting in the 1930's.

The "Apex" band? That's a term we had not previously encountered, but we do know that there definitely were at least nine frequencies between 35.6 and 40.6 MHz in the mid-1930's that were set aside for "high frequency broadcast" purposes. We don't know why they were allocated, or if they were ever used.

High fidelity AM broadcasting is quite another story, and we do know that four stations were authorized by the FCC, including two in cities specified by McMurdo Silver. Except that they weren't in the "Apex" band.

Remember that radio had grown very rapidly in the USA. In 1920, there were 37,000 receivers in the US; that included all hams and experimenters. In 1922, there were 150,000 receivers. In 1926, there were 5-million, and growing at a rate of a million per year. In 1926, there were 605 active broadcasters in the USA, with 112 preparing to start up. While broadcasters of 1922 ran an average of 150 watts, in 1926 the average power was 840 watts.

But, by the early 1930's the initial novelty of radio broadcasting had worn off. Audiences wanted more than just a box that made sounds, they were beginning to ask about better programs, and improved audio quality. At least by 1934, and possibly earlier, ads for more expensive broadcast receivers were using the term "high fidelity."



VERIFICATION--W9XBY--1000 watts, 1530 Kc. Kansas City, Mo.

This is to thank you for your report on the reception of W9XBY on ________ at ________. W9XBY is one of the 4 new "high fidelity" stations in the U.S., and is operated in the interest of higher quality radio transmission. The equipment used is NEW RCA-Victor 1-D, 1000 watt "high fidelity" transmitter and using new RCA-Victor amplifiers and velocity microphones. Studios are located on the 29th floor of the Power & Light Building--transmitter near 86th & Wornall Road.

Equipment is operated entirely by student-engineers enrolled in the training division of FIRST NATIONAL TELEVISION INC., who also own and operate Television Station W9XAL in synchronization with voice channel W9XBY. Complete details regarding our thorough technical training will be sent on request. THANKS!

FIRST NATIONAL TELEVISION, INC.

00406 By

This QSL wasn't much to look at, but it confirmed reception of AM high fidelity station W9XBY, which was sometimes used for sending out the audio portion of early TV station W9XAL's broadcasts. (Courtesy Joe Hueter, PA.)

By 1933, the FCC had started to authorize the first of four experimental (which later became commercial) 1 kW wideband AM stations specifically established for the purposes of high fidelity broadcasting. In those days, the AM broadcasting band ended at 1500 kHz, and these stations were authorized just above that band edge.

Mike Roslowski, WA2HBD, looks to have discovered some reference to these stations. He recently wrote us to say that he has an old Zenith "Long Distance" table radio, and saw some odd listings indicated on the tuning dial between 1500 and 1600 kHz. They showed where stations W1XBS and W6XAI could be tuned in. These were two of the four AM high fidelity stations established in the 1930's.

The four high fidelity stations were:

W1XBS, 1530 kHz, Waterbury, CT. Operated by the American Republican. This station went on the air in November of 1934, and by 1936 was using its commercial callsign, WBRY. In later years, WBRY moved to 1590 kHz and ran 5 kW. Presently this station is known as WQQW.

W2XR, 1550 kHz, New York, NY (actually Long Island City, NY). Operated since late 1934 by Scientific Broadcasting Service, Inc. This station became commercial station WQXR in 1936, and later moved to 1560 kHz, where it presently operates with 50 kW.

W6XAI, 1550 kHz, Bakersfield, CA. Operated from 1933 by Pioneer Mercantile Co., which also had an early TV station in Bakersfield (W6XAH/W6XE, 2 to 2.1 MHz). This station became KPMC, and is presently 10 kW broadcaster KNZR on 1560 kHz.

W9XBY, 1530 kHz, Kansas City, MO. Operated by the student engineers in the training division of First National Television, Inc., which operated video transmitter W9XAL. The AM high fidelity station was used to supply the audio for W9XAL's video. W9XBY had an RCA Type 1-D transmitter located on the 29th floor of the Power and Light Building at 86th and Wornall

Road. W9XBY became station KXBY, and, in the summer of 1938, evolved into KITE. This was not a long-lived station.

By early 1937, all four stations were using their commercial callsigns although they were still operating above the 1500 kHz edge of the broadcast band. When the band edge was extended by the FCC up to 1600 kHz in 1941, conventional broadcasters were also allowed to use frequencies above 1500 kHz.

So what became of the noble AM high fidelity experiment? Keep in mind that experimental FM broadcasting tests started in 1933. In 1934, Maj. Edwin Armstrong sent out transmissions for a brief period over W2XF from New York City's Empire State Building. By 1938, the Yankee Network had obtained the first FCC license to put an FM broadcast station in operation. This was 50 kW experimental W1XOJ (44.8 MHz) on the air from Mount Wachusett, in Princeton, MA. Armstrong's own FM station, W2XMN, on 42.8 MHz, in Alpine, NJ also started operating in 1938. The first FMcaster in New York City went on the air in 1939. Ironically (or maybe not), this was W2XQR, owned by WQXR (ex-W2XR), one of the four AM high fidelity stations.

Although FM got off to a slow start, it was apparent that its audio quality could beat the pants off the best that AM high fidelity could ever hope to offer. By 1941, there were about 47 experimental FM broadcasters in operation (42.6 to 47.5 MHz band) in the USA. It's a good bet that this, along with the FCC's opening of the 1500 to 1600 kHz portion of the AM band to regular AM broadcasters, were the clues that AM high fidelity had become a moot issue. It was tried and, although a significant improvement over standard AM, it didn't offer the fidelity of FM.

Still, from a point of view of more than fifty years later, the four stations established for these experiments were interesting as well as a part of broadcasting history.

Speaking of High Fidelity

In 1947 there were some 700 FMcasters, but about 200 less than that ten years later. Four years later the number had risen to better than 1,000, although a great number of them were surviving primarily on the income generated by their secondary (subcarrier) services, such as background music and similar leased transmission services to offices, factories, schools, and stores.

FM stations, in that era, were all transmitting mono sound. This didn't fit very well with the fact that stereo discs had shown up in the early 1950's and many were available to audiophiles by 1960.

In 1961, KDKA-FM, in Pittsburgh, PA received FCC permission to broadcast test transmissions in FM stereo formats proposed by no less than six different companies, including GE and Zenith. The results of the KDKA-FM tests were turned over to the FCC so the agency could select a format to authorize as the broadcast industry standard for FM stereocasting.

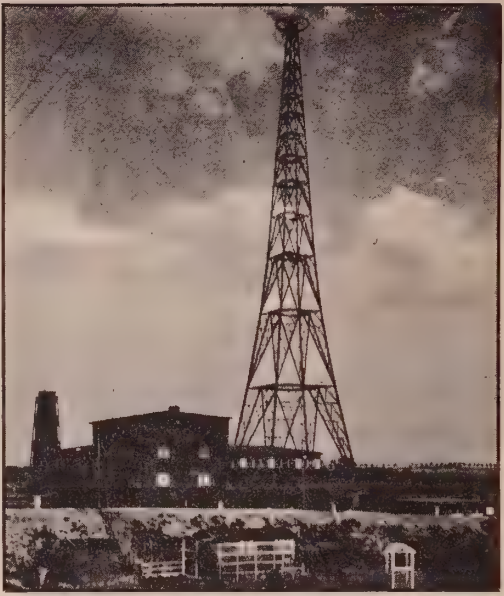
The strong and weak points of all six systems were evaluated and, on April 24th, 1961, the FCC announced that the final decision was to go with a hybrid approach that combined the high points of both the Zenith and GE formats. The FCC said that on June 1, 1961, FM stations could start stereocasting without any further specific authority or license modification.

On June 1, the first day that FM stereo was permitted, FM stations KMLA, WEFM, and WGFM all rose to the occasion by airing a couple of hours of stereocasting. These stations are presently known as KQLZ-FM, in Los Angeles; WUSN-FM, Chicago; and WGY-FM, Schenectady, NY. Actually, WGFM was the first station on the air with stereo because it began at midnight Eastern Time, which was an hour ahead of when WEFM could begin at midnight in the Central Time Zone, and three hours ahead of KMLA in the Pacific Time zone.

After that, other stations began acquiring the necessary equipment and joining in. Because of a shortage of stereo program material, it took several years before full-time stereocasting became the standard practice. This year marks exactly thirty years that FM stereocasting began. Stereo was obviously a major factor in helping to spark the phenomenal growth and popularity in FMcasting.

When you stop to think about it, FM stereo is part of a chain of developments dating to early 1930's innovative concepts that sought to bring listeners the best sound quality possible. It harks back to the four wideband AM high fidelity experimental stations, as well as Armstrong's W2XF—all generally forgotten, except by those who stop to remember and appreciate that today's technologies have roots deeply seated in many decades of trial, error, failure, redesign, and eventual success.

Some say that today's FM stereo will be replaced in a dozen years or so by newer concepts on the horizon, such as digital audio broadcasting (DAB). If so, DAB will also look back to those same early efforts to improve broadcast sound quality.



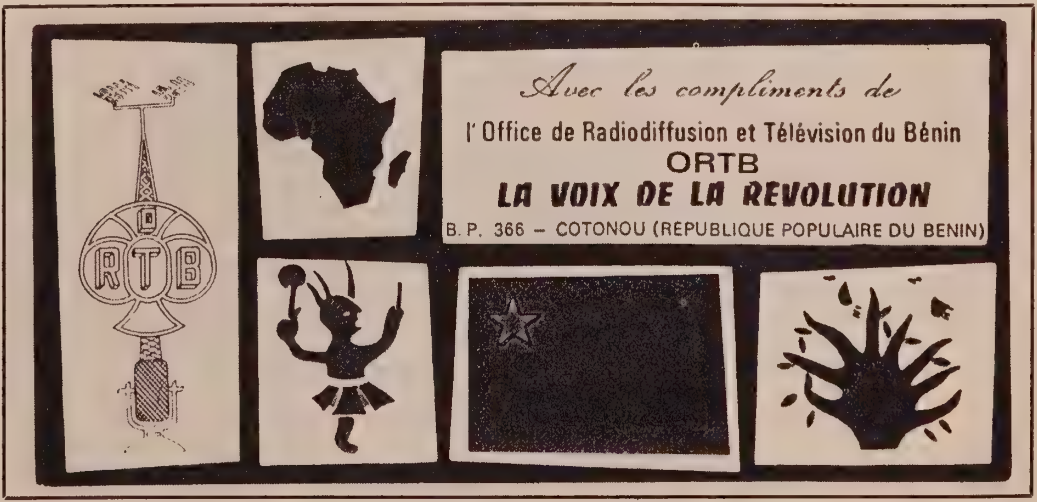
This is Hamburg's 904 kHz 100 kW station in 1934. Would you believe that the tower is constructed completely of wood?

Everything In The Name of Progress

A previous *POP'COMM* mention (many months ago) listed the names of those inventors credited with having devised early television methods. One of those named was Scottish inventor John Logie Baird.

Not long after we ran that story, a letter arrived from reader Michael Heath, of Rhode Island, asking about the influence Baird's system had on the development of early television in the USA.

Early TV broadcast experiments in the USA and in Europe were mechanical scanning disk arrangements. This was Baird's basic invention, although there were variations on Baird's exact system. In later years,



Avec les compliments de

l'Office de Radiodiffusion et Télévision du Bénin

ORTB

LA VOIX DE LA REVOLUTION

B.P. 366 – COTONOU (REPUBLIQUE POPULAIRE DU BENIN)

QSL from the government broadcaster in the African nation of Benin. (Courtesy Owen Williamson, TX.)

Farnsworth's electron beam TV system replaced Baird's mechanical scanning disk TV.

In early 1932, New York City broadcast station WMCA applied to the FCC for an experimental license to test the authentic Baird television system with a 1 kW transmitter operating between 2850 and 2950 kHz. Although the application was filed in the name of WMCA, the proposed station was to be operated jointly with Baird Television Corp., Ltd., a British firm headed by the inventor himself. Baird was the only engineer qualified to supervise the installation, tuning, and operation of his television apparatus.

At the hearing for the license, Mr. Baird himself appeared as a witness. The go-ahead was given by FRC Examiner Ralph L. Walker, and all of the equipment was delivered to WMCA in confident expectation that everything would go smoothly. However, by April of '32, the Federal Radio Commission reversed Walker's decision and decided to bar the issuance of a license to WMCA. The objection was because, even though WMCA was an American firm, Baird and his firm would be involved, and they constituted an "alien identity."

Under the circumstances, it was a flimsy excuse. Good to see that we hadn't slammed the same door on Fleming, Hertz, Watson-Watt, and other "aliens." You can hardly help but wonder if maybe there were some hidden commercial pressures at work behind the flip-flop on the Baird approval.

Tower of Power

We have heard of some unusual engineering accomplishments, but certainly one of the most unusual we have bumped into in quite a while relates to the station in Hamburg, Germany, on 904 kHz. No one-lunger by any means, in 1934, the Hamburg station was running a sizzling 100 kW and was being reported between midnight and 2 a.m. by DX'ers in North America.

One look at the station and you had to be impressed, especially with its mighty 450 ft. transmission tower. What you might not have realized was that the station's tower was unique in the world because it was fabricated entirely of wood!

Don't ask us why wood was employed, or what kind of wood it was, or how they prevented it from rotting, getting termites, catching fire, falling over in the wind, or collapsing under its own weight. Anything we could say would be pure guesswork, but the fact remains that it was wood. The only assumption we can make is that the antenna itself was probably a vertical wire suspended inside the wooden tower.

If any reader knows the real story behind this unusual antenna, we hope they will drop us a letter and share the information. It has got to be something more exciting than a steel shortage or a cost-saving measure. How do you suppose Ripley's *Believe It Or Not* missed this matchstick marvel?

Very African Veri

Anybody out there remember an African nation called Dahomey? It might have occurred to you that you don't hear it mentioned much any longer. Dahomey had once been known as French West Africa, but got its independence in 1960. However, in 1975, the name Dahomey was changed to The People's Republic of Benin. The new name reflected a strong left turn of its political leaning, however those politics were renounced in 1989. The name remained the same.

Owen Williamson, of El Paso, TX, included a QSL from the government's station in Benin in a huge collection of veries he donated to the *POP'COMM* archives. The brightly colored QSL card listed two transmitters, Matin on 1475 and 4870 kHz, also Mi-Journee on 1475 and 7190 kHz. There are a dozen languages shown as being used by the station, including English, French, and Yoruba. The station was *La Voix de la Revolution*.

The government's stations are still the only game in town in Benin, only now they are at Cotonou and Parakou, operating on 936, 1476, 4870, and 5025 kHz, plus low-power FM on 88.4 and 94.8 MHz. The same station name is used.

Back in November

We hope you will join us next issue for further explorations through the overgrown pathways of radio's almost-forgotten past. We appreciate your contributions in the form of old QSL's (originals or good photocopies), old radio magazines, old station lists and rosters, old station photos and picture postcards, questions and clippings, and what-have-you. Every little bit is of use to us.

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8012 CONSER BOX 4327
OVERLAND PARK, KANSAS 66204

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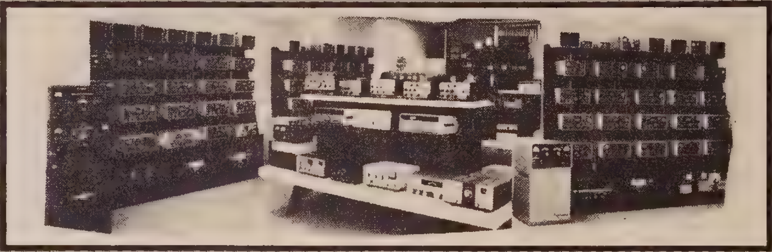

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POP'COMM Reviews:

It's Here! The New Drake R8 Communications Receiver!

First Class All The Way, The Drake R8 Upholds A Proud Tradition

The R. L. Drake Company has been producing precision electronics products since 1943. Many a ham and SWL shack is still equipped with any of the several popular Drake communications receivers produced until a few years ago. When the satellite TV receiving market took off in the early 1980's, Drake's satellite receiving equipment was in such high demand that the company devoted all of its efforts in that direction.

Now, Drake has brought out an all new communications receiver that we were given a chance to look at as soon as it became available. It's called the Drake R8, and it's good to have this important company back producing their quality communications receivers again.

The new Drake R8 has arrived on the scene. Wow!

An Overall Look

The basics: R8 covers 100 kHz to 30 MHz, AM, USB, SSB, CW, RTTY, and FM. An optional VHF converter adds 35 to 33 MHz and 108 to 174 MHz. The receiver operates from 100, 120, 200, or 240 VAC, 50 or 60 Hz. The R8 weighs 13 lbs.

There is a recorder output and a built-in speaker, although a matching external speaker is optionally available. A software remote control package is optionally available for RS232C interface.

Sensitivity for SSB/CW (10 dB S + N/N) is rated less than 1 uV below 1500 kHz; less than 0.5 uV from 1500 kHz to 30 MHz (less than 0.25 uV with preamplifier). AM sensitivity (10 dB S + N/N) is 3 uV below 1500 kHz, 1.5 uV between 1500 kHz and 30 MHz (0.8 uV with preamplifier). FM sensitivity is 0.5 uV above 1500 kHz.

The first IF is at 45 MHz, with the second IF at 50 kHz. IF rejection is 80 dB at 45 MHz, 100 dB at 50 kHz. FM selectivity is rated at 12 kHz at −6 dB, less than 25 kHz at −60 dB. In AM, SSB, RTTY, and CW modes, there are five filter bandwidths with the following selectivity, as follows:

6 kHz at −6 dB, less than 12 kHz at −60 dB;

4 kHz at −6 dB, less than 8 kHz at −60 dB;

2.3 kHz at −6 dB, less than 4.5 kHz at −60 dB;

1.8 kHz at −6 dB, less than 3.6 kHz at −60 dB;

500 kHz at −6 dB, less than 1.5 kHz at −60 dB.

Image rejection is rated at better than 60 dB below 1500 kHz, and 80 dB above 1500 kHz. The AGC has two selectable release durations, 2 seconds or 300 mSec. The notch filter attenuation is at least 40 dB (between 500 and 5000 Hz).

The HF antenna inputs will accept either 50 ohm coax or a high impedance longwire.

Other Features

There has been much talk of late in monitoring circles about synchronous detectors in some receivers. This circuitry improves the quality of AM mode reception, especially under conditions of severe fading. The Drake R8 was designed with a synchronous detector feature that may be activated when needed.

More importantly, the Drake R8 is a good signal catcher, too. First of all, it practically operates itself. After you go through the Owner's Manual once to get to know where everything is and what it does, you realize that it's so simple that you won't have to keep going back to the manual each time you need to do something.

It went from out of the carton to bringing in *Radio Netherlands* in minutes, and that's before we stopped to read the Owner's Manual. As we got to know the Drake R8 a bit, we became familiar with its features and controls, and were very impressed with its operation in the shortwave broadcast, ham, ute, and AM broadcast bands. Using a horizontal longwire antenna about 50 ft. in length, the R8 even brought in signals on CB, and some receivers balk at CB reception under such conditions.

The receiver had no trouble pulling in the weak ones. The noise blanker did its job well, so did the notch filter. Everything did its job well, and it was easy to use. We'd say that the Drake R8 amply satisfied us, and upholds with honor the proud heritage of this distinguished manufacturer. This receiver, by the way, is manufactured in the USA. The MSRP is $979.00.

The R8 comes from R.L. Drake Co., P.O. Box 3006, Miamisburg, OH 45342.

This receiver has a full one-hundred memory channels for you to store frequencies you want to access in minimum time. Each of the memory locations permits you to program in the frequency, desired mode, bandwidth, AGC setting, RF setting (preamp or attenuator), antenna, notch on/off, noise blanker setting, synchronous detector on/off. This memory feature is non-volatile, so even if the equipment should be removed from its power source, all stored memory information will be retained.

Frequencies may be selected from the memories, or can be programmed in from the front panel keyboard. Or, you can use the tuning knob. Alternately, you can press either of two front panel levers to increase or decrease the received frequency by 100 Hz with each depression. Pressing and holding either key allows continuous stepping through a frequency range for as long as the key is held down.

You can also scan. The Drake R8 will scan all frequencies stored in the set's memory locations, or can be programmed to scan only those you specially select, or will scan within the frequency limits programmed into the set's two variable frequency oscillators (VFO's). The scanning can be further programmed to stop on the first carrier it detects, or stop on a detected carrier for five seconds and then resume scanning, or wait until a detected carrier is off the air for five seconds before resuming scanning.

The R8 frequency step selection is automatic. A default step is selected based upon the mode being received. In USB, LSB, RTTY, and CW modes, the tuning and display resolution is 10 Hz. In AM, the tuning resolution is 100 Hz, while the display resolution is 1 kHz. These defaults may be altered by the use of the front-panel *Step* key.

R8's noise blanker has two positions. The *narrow* position is intended for eliminating most of the noise encountered. There's also a *wide* setting intended for use when you're facing short duration, high impulse noises such as auto-ignition. It will also work on over-the-horizon-radar (OHTR) "woodpecker" noises.

Operation

Anybody who has ever had the pleasure of using earlier Drake receivers is aware that the company long ago discovered the meaning of *user friendly*. Some equipment manufacturers were producing equipment so completely encrusted with knobs and switches that you felt you needed an engineering degree and a year's worth of hard study to figure out the complex Owner's Manual. Not Drake equipment, then or now.

The R8 is a highly sophisticated receiver. We'd call it professional grade, or about as close to it as receivers get these days. Yet the illustrated Owner's Manual requires only 28 pages, and it's very straightforward. But so is the equipment, itself. The oft-seen clutter of knobs has been kept to a minimum by the clever use of dual-function controls where possible. It makes for a sleek and attractive look that reminds one of an upscale stereo tuner in appearance as opposed to that nuts-and-bolts look that many people don't care for. With its gray cabinet, green LED's, and orange/white highlights, it's very eye-catching. ■

Reviewed by POP'COMM staff.

Wilson
1000

World's Most Powerful CB and Amateur Mobile Antenna*

Lockheed Corp. Test Shows Wilson 1000 CB Antenna Has 58% More Gain Than The K40 Antenna (on channel 40).

In tests conducted by Lockheed Corporation, one of the world's largest Aerospace Companies, at their Rye Canyon Laboratory and Antenna Test Range, the Wilson 1000 was found to have 58% more power gain than the K40 Electronics Company, K40 CB Antenna. This means that the Wilson 1000 gives you 58% more gain on both transmit and receive. Now you can instantly increase your operating range by using a Wilson 1000.

Lockheed - California Company
A Division of Lockheed Corporation
Burbank, California 91520

Aug. 21, 1987

Wilson Antenna Company Inc.
3 Sunset Way Unit A-10
Green Valley Commerce Center
Henderson, Nevada 89015

Subject: Comparative Gain Testing of Citizen's Band Antennas
Ref: Rye Canyon Antenna Lab File #870529

We have completed relative gain measurements of your model 1000 antenna using the K-40 antenna as the reference. The test was conducted with the antennas mounted on a 16' ground plane with a separation of greater than 300' between the transmit and test antennas. The antennas were tuned by the standard VSWR method. The results of the test are tabulated below:

FREQUENCY (MHZ)	RELATIVE GAIN (dB)	RELATIVE POWER GAIN (%)
26.965	1.30	35
27.015	1.30	35
27.065	1.45	40
27.115	1.60	45
27.165	1.50	41
27.215	1.60	45
27.265	1.75	50
27.315	1.95	57
27.365	2.00	58
27.405	2.00	58

58% MORE POWER GAIN THAN THE K40

Guaranteed To Transmit and Receive Farther Than Any Other Mobile CB Antenna or Your Money Back**

New Design

The Wilson 1000 higher gain performance is a result of new design developments that bring you the most powerful CB base loaded antenna available.

Why Wilson 1000 Performs Better

Many CB antennas lose more than 50% of the power put into them. The power is wasted as heat loss in the plastic inside the coil form and not radiated as radio waves.

We have designed a new coil form which suspends the coil in air and still retains the rigidity needed for support. This new design eliminates 95% of the dielectric losses. We feel that this new design is so unique that we have filed a patent application on it.

In addition, we use 10 Ga. silver plated wire to reduce resistive losses to a minimum.

In order to handle higher power for amateur use, we used the more efficient direct coupling method of matching, rather than the lossy capacitor coupling. With this method the Wilson 1000 will handle 3000 watts of power.

The Best You Can Buy

So far you have read about why the Wilson 1000 performs better, but it is also one of the most rugged antennas you can buy. It is made from high impact thermoplastics with ultraviolet protection. The threaded body mount and coil threads are stainless steel; the whip is tapered 17-7 ph. stainless steel. All of these reasons are why it is the best CB antenna on the market today, and we guarantee to you that it will outperform any CB antenna (K40, Formula 1, you name it) or your money back!

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High Adventure DX

Coast Guard Communications

BY JERRY V. CODY

The United States Coast Guard is responsible for drug interdiction, fisheries enforcement, and search and rescue off the coasts of the United States.

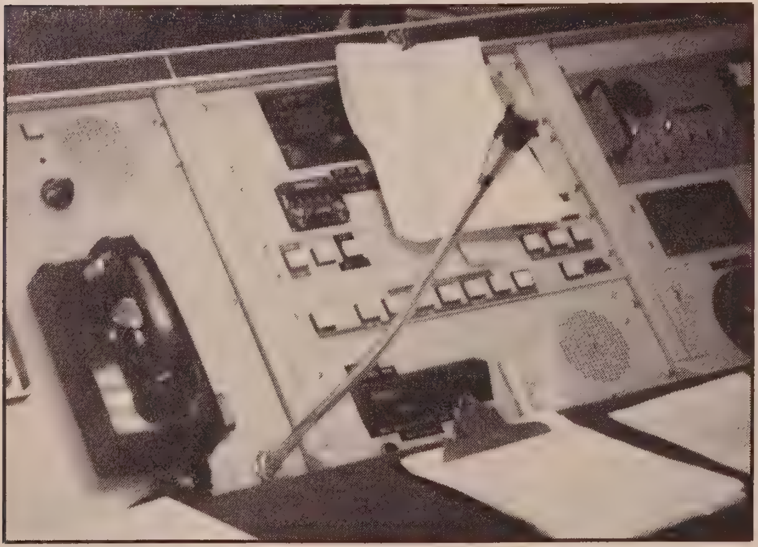
The threat of illegal and dangerous drugs in the Northwest originates from Southeast Asia. Mother ships carrying a cargo of marijuana valued between $250 and $300 million call the Philippines for fuel before offloading to smaller craft off the Pacific coast. When a mother ship or smaller boat laden with illegal drugs is located by the Coast Guard, the cargo is seized and those involved arrested.

Fisheries enforcement within the 200 mile zone exclusive to the United States is maintained by the Coast Guard. Law enforcement air patrols cover the fishing grounds within the 200 mile limit. These flights guard against fishing treaty violations and maintain surveillance of foreign fishing fleets. A National Marine Fisheries Service (NMFS) agent records fishing fleet registry, fishing activity, along with size and species of catch on the patrol.

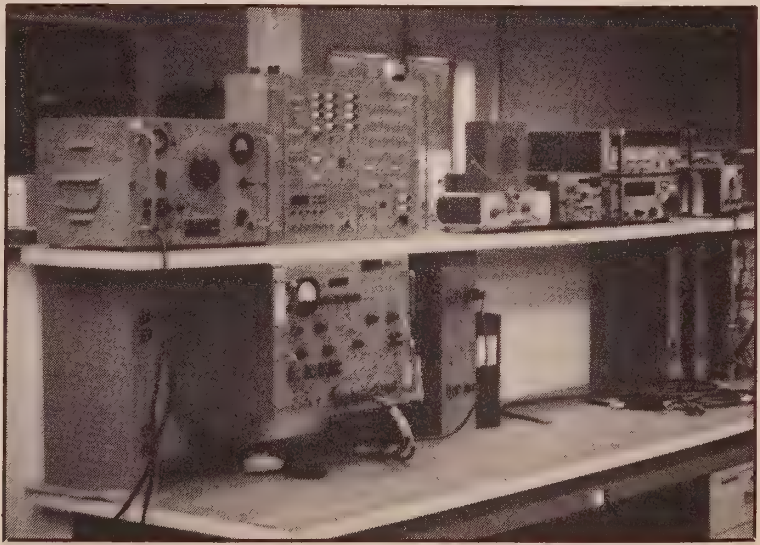
The twin engine HH-65-A Dolphin helicopter is capable of flying 150 miles offshore, hovering for twenty minutes, and returning to base. The helicopter was manufactured by Aerospatiale of France and was designed to transport three people. The construction consists of a honeycomb of Kelvar, graphite, and fiberglass surrounded by an aluminum skin.

Search and rescue operations are widely publicized when the U.S. Coast Guard is involved. On the morning of Saturday April 25, 1987, a dramatic rescue was coordinated by Coast Guard Communications Stations NMC in San Francisco, California. A United States Navy aircraft carrier was on the scene of a tugboat fire in the Pacific Ocean 1,100 miles West of San Francisco. The fire on the tug started during the routine maintenance when a stream of oil hit a turbocharger with a temperature of approximately 2000 degrees. The tugboat crew of four was saved from burning to death on the open sea thanks to U.S. Navy and Coast Guard personnel.

Another exciting rescue involving the Coast Guard occurred during the early



Communications console Coast Guard Astoria, Oregon. The red telephone is used for receiving incoming search and rescue calls.



Electronic test equipment for maintaining communications equipment.

U.S. Coast Guard Cutter Sherman. This 378 foot ship is one of twelve designed back in the early 1960's. Armed with a five inch deck gun, this ship serves well in law enforcement patrols South from the Gulf of Alaska.

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CISCO CA/NMC

tion & Weather

Emission	Contents
SITOR	Areas 1,9,10
CW	Areas 1,9,10
Facsimile	Areas 5,6
Voice	Area 2, NTM's
Facsimile	Areas 3,4
CW	Area 7, NTM's
CW	Area 8, NTM's
Voice	Areas 1,9,10
Facsimile	Area 5
CW	Area 9, NTM's
CW	Areas 1,9,10
Voice	Areas 1,9,10
Voice	Area 2, NTM's
Facsimile	N/A
CW	Area 9, NTM's
Voice	Areas 1,9,10
CW	Area 7, NTM's
Facsimile	Areas 5,6
SITOR	Areas 1,9,10
CW	Area 8, NTM's
CW	Areas 1,9,10
Facsimile	Area 5
Voice	Areas 1,9,10
Facsimile	Areas 5,6

een 30°N and 60°N east of

250 miles offshore.

7 FZUS6, KLAX, Point Conception to Mexican border
8 FZUS8, KSFO, Cape St. James to Pt. St. George, 60 to 250 Miles offshore
9 FZUS8, KSFO, Cape St. James to Guadaloupe Is., 60 to 250 miles offshore
10 FZPN, High seas N. Pacific, 160°E-140°W, Equator to 50°N. Includes warnings, synopsis and forecast.

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High Adventure DX

Coast Guard Communications

BY JERRY V. CODY

The United States Coast Guard is responsible for drug interdiction, fisheries enforcement, and search and rescue off the coasts of the United States.

The threat of illegal and dangerous drugs in the Northwest originates from Southeast Asia. Mother ships carrying a cargo of marijuana valued between $250 and $300 million call the Philippines for fuel before offloading to smaller craft off the Pacific coast. When a mother ship or smaller boat laden with illegal drugs is located by the Coast Guard, the cargo is seized and those involved arrested.

Fisheries enforcement within the 200 mile zone exclusive to the United States is maintained by the Coast Guard. Law enforcement air patrols cover the fishing grounds within the 200 mile limit. These flights guard against fishing treaty violations and maintain surveillance of foreign fishing fleets. A National Marine Fisheries Service (NMFS) agent records fishing fleet registry, fishing activity, along with size and species of catch on the patrol.

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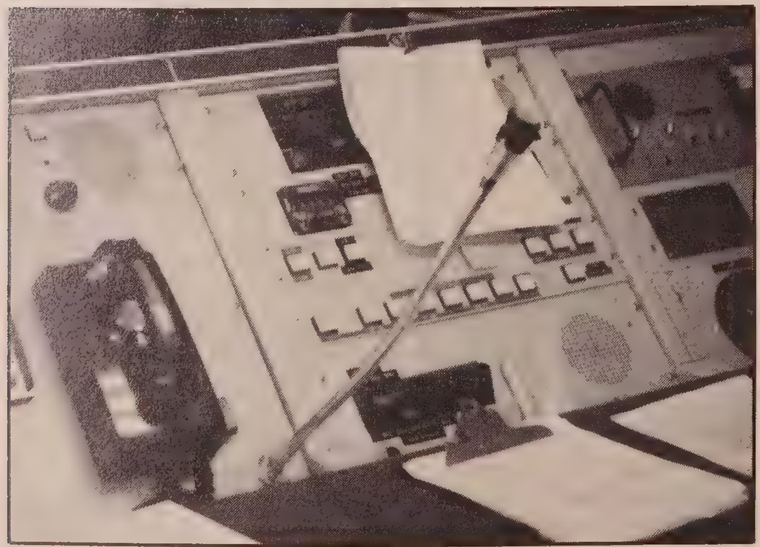

Communications console Coast Guard Astoria, Oregon. The red telephone is used for receiving incoming search and rescue calls.

Electronic test equipment for maintaining communications equipment.

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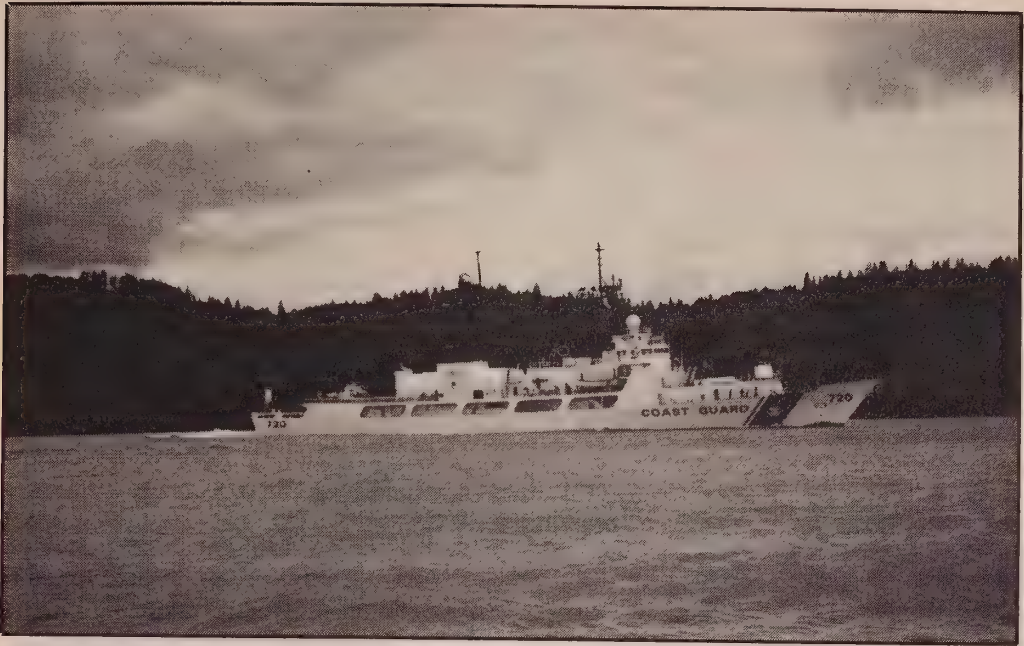

U.S. Coast Guard Cutter Sherman. This 378 foot ship is one of twelve designed back in the early 1960's. Armed with a five inch deck gun, this ship serves well in law enforcement patrols South from the Gulf of Alaska.

COAST GUARD COMMSTA SAN FRANCISCO CA/NMC
Broadcast Schedule - Marine Information & Weather

Time	Frequency	Emission	Contents
0000Z	8714.5/17207 kHz	SITOR	Areas 1,9,10
0030Z	8682/12730/17151.2 kHz	CW	Areas 1,9,10
0145Z	4346/8682/12730 kHz	Facsimile	Areas 5,6
0230Z	2671.4 kHz	Voice	Area 2, NTM's
0300Z	4346/8682/12730 kHz	Facsimile	Areas 3,4
0300Z	472 kHz (Long Beach Remote)	CW	Area 7, NTM's
0400Z	472 kHz (Astoria Remote)	CW	Area 8, NTM's
0430Z	4430.1/8766.8/13114.6 kHz	Voice	Areas 1,9,10
0500Z	4346/8682/12730 kHz	Facsimile	Area 5
0500Z	472 kHz (Locally Keyed)	CW	Area 9, NTM's
0630Z	4346/8682/12730 kHz	CW	Areas 1,9,10
1030Z	4430.1/8766.8/13114.6 kHz	Voice	Areas 1,9,10
1403Z	2671.4 kHz	Voice	Area 2, NTM's
1500Z	8682/12730/17151.2 kHz	Facsimile	N/A
1600Z	472 kHz (Locally Keyed)	CW	Area 9, NTM's
1630Z	8766.8/13114.6/17308.7 kHz	Voice	Areas 1,9,10
1700Z	472 kHz (Long Beach Remote)	CW	Area 7, NTM's
1715Z	8682/12730/17151.2 kHz	Facsimile	Areas 5,6
1800Z	8714.5/17207 kHz	SITOR	Areas 1,9,10
1830Z	472 kHz (Astoria Remote)	CW	Area 8, NTM's
1900Z	8682/12730/17151.2 kHz	CW	Areas 1,9,10
2015Z	8682/12730/17151.2 kHz	Facsimile	Area 5
2230Z	8766.8/13114.6/17308.7 kHz	Voice	Areas 1,9,10
2330Z	8682/12730/17151.2 kHz	Facsimile	Areas 5,6

Broadcast Area Codes

Code	Area
1	FZPN, Equator to 30°N east of 140°W and between 30°N and 60°N east of 160°E.
2	FZUS9 KSFO, PT Arena to PT Conception, 60 to 250 miles offshore.
3	40°N to 52N, east of 135°W.
4	28°N to 40°N, east of 132°W.
5	30°N to 60°N, east of 160°E.
6	20°S to 30°N, east of 160°W.
7	FZUS6, KLAX, Point Conception to Mexican border
8	FZUS8, KSFO, Cape St. James to Pt. St. George, 60 to 250 Miles offshore
9	FZUS8, KSFO, Cape St. James to Guadaloupe Is., 60 to 250 miles offshore
10	FZPN, High seas N. Pacific, 160°E-140°W, Equator to 50°N. Includes warnings, synopsis and forecast.

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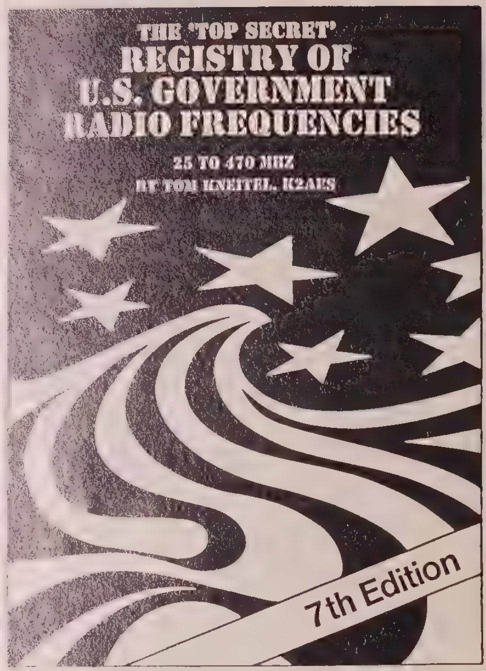

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CIRCLE 131 ON READER SERVICE CARD

COAST GUARD

Both photos show antenna arrays for group communications.

morning hours of Friday December 7, 1990. A crab boat had ruptured its hull off the coast of Ilwaco, Washington. The fifty foot boat's deck was awash with icy Pacific water. A mayday was sent from the boat's radio, and the message was received by United States Coast Guard Group Astoria, Oregon. Within minutes an HH-65-A Dolphin helicopter was launched and arrived on the scene shortly thereafter. The helicopter lowered a pump, and the sinking boat's crew was able to pump out enough water to keep the vessel afloat. A Coast Guard rescue boat was then able to safely tow the boat to shore.

The Coast Guard has saved many lives and stopped tons of illegal and dangerous drugs from being available ashore. No other government or civilian agency has a record as successful in law enforcement and public safety as the United States Coast Guard.

MARITIME SIMPLEX FREQUENCIES USED BY THE COAST GUARD

2182 kHz International Distress
4125 kHz
4143.6 kHz
6218.6 kHz
6221.6 kHz
8291.1 kH
8294.2 kHz
12,429.2 kHz
12,432.3 kHz
16,587.1 kHz
16,593.3 kHz
22,124 kHz

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Emergency Operations Center has expanded to our new two acre facility and World Headquarters. Because of our growth, CEI is now your *one stop source* for emergency response equipment. When you have a command, control or communications need, essential emergency supplies can be rushed to you by CEI. As always, for over twenty two years, we're ready, willing and able to help.

Our RELM two-way radio transceivers were especially created for government agencies. When you need to talk to police, fire, ambulance, or state, federal and international response forces, RELM transceivers may be quickly programmed for up to 48 frequencies. Listed below, are some of our most asked about transceivers. For additional assistance, call CEI at 313-996-8888.

NEW! RELM® RSP500-A

List price $465.00/**CE price $319.95/SPECIAL**
20 Channel • 5 Watt • Handheld Transceiver
Frequency range: 148-174 MHz. continuous coverage. Will also work 134-148 MHz. with reduced performance.

The *RELM* RSP500B-A is our most popular programmable 5 watt, 20 channel handheld transceiver. You can scan 20 channels at up to 40 channels per second. It includes CTCSS tone and digital coded squelch. Snap on batteries give you plenty of power. Additional features such as time-out timer, busy-channel lockout, cloning, plug-in programming and IBM PC compatability are standard. It is F.C.C. type accepted for data transmission and D.O.C. approved. We recommend also ordering the **BC45** rapid charge 1½ hour desk battery charger for $99.95, a deluxe leather case **LC45** for $48.95 and an external speaker microphone with clip **SM45** for $59.95. Since this radio is programmed with an external programmer, be sure to also order one **PM45** at $74.95 for your radio system.

NEW! RELM® UC102/UC202

List price $128.33/**CE price $79.95/SPECIAL**

CEI understands that all agencies want excellent communications capability, but most departments are strapped for funds. To help, CEI now offers a special package deal on the RELM UC102 one watt transceiver. You get a UC102 handheld transceiver on 154.5700 MHz., flexible antenna, battery charger and battery pack for only $79.95. If you want even more power, order the RELM **UC202** two watt transceiver for $114.95.

NEW! RELM® RH256NB-A

List price $449.95/**CE price $299.95/SPECIAL**
16 Channel • 25 Watt Transceiver • Priority Time-out timer • Off Hook Priority Channel

The *RELM* RH256NB is the updated version of the popular RELM RH256B sixteen-channel VHF land mobile transceiver. The radio technician maintaining your radio system can store up to 16 frequencies without an external programming tool. All radios come with CTCSS tone and scanning capabilities. This transceiver even has a priority function. Be sure to order one set of programming instructions, part # **PI256N** for $10.00 and a service manual, part # **SMRH256N** for $24.95 for the RH256NB. A 60 Watt VHF 150-162 MHz. version called the **RH606B** is available for $429.95. A UHF 15 watt, 16 channel similar version of this radio called the **LMU15B-A** is also available and covers 450-482 MHz. for only $339.95. An external programming unit **SPM2** for $49.95 is needed for programming the LMU15B UHF transceiver.

NEW! RELM® LMV2548B-A

List price $423.33/**CE price $289.95/SPECIAL**
48 Channel • 25 Watt Transceiver • Priority

RELM's new LMV2548B gives you up to 48 channels which can be organized into 4 separate scan areas for convenient grouping of channels and improved communications efficiency. With an external programmer, your radio technician can reprogram this radio in minutes with the **PM100A** programmer for $99.95 without even opening the transceiver. A similar 16 channel, 60 watt unit called the **RMV60B** is available for $489.95. A low band version called the **RML60A** for 30-43.000 MHz. or the **RML60B** for 37-50.000 MHz. is also available for $489.95.

RELM® Programming Tools

If you are the dealer or radio technician maintaining your own radio system, you **must** order a programming tool to activate various transceivers. The **PCKIT010** for $149.95 is designed to program almost all RELM radios by interconnecting between a MS/DOS PC and the radio. The **PM100A** for $99.95 is designed to externally program the RMV60B, RML60A, RML60B and LMV2548 radios. The **SPM2** for $49.95 is for the LMV25B and LMU15B transceivers. The **RMP1** for $49.95 is for the RMU45B transceiver. *Programmers must be used with caution and only by qualified personnel because incorrect programming can cause severe interference and disruption to operating communications systems.*

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PRO640E-A3 *Uniden* 40 ch. SSB CB mobile	$133.95
PRO810E-A *Uniden* 40 channel SSB CB Base	$174.95

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Bearcat® 200XLT-A

List price $509.95/**CE price $239.95/SPECIAL**
12-Band, 200 Channel • 800 MHz. Handheld Search • Limit • Hold • Priority • Lockout
Frequency range: 29-54, 118-174, 406-512, 806-956 MHz. Excludes 823.9875-849.0125 and 868.9875-894.0125 MHz.

The *Bearcat* 200XLT sets a new standard for handheld scanners in performance and dependability. This full featured unit has 200 programmable channels with 10 scanning banks and 12 band coverage. If you want a very similar model without the 800 MHz. band and 100 channels, order the **BC 100XLT-A3** for only $179.95. Includes antenna, carrying case with belt loop, ni-cad battery pack, AC adapter and earphone. Order your scanner now.

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List price $549.95/**CE price $239.95/SPECIAL**
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Bands: 29-54, 118-174, 406-512, 806-912 MHz.
Now...nothing excluded in the 806-912 MHz band.

The Uniden 800XLT receives 40 channels in two banks. Scans 15 channels per second. Size 9¼" x 4½" x 12½." If you do not need the 800 MHz. band, a similar model called the **BC 210XLT-A** is available for $178.95.

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The *Uniden* MR8100 surveillance scanner is different from all other scanners. Originally designed for intelligence agencies, fire departments and public safety use, this scanner offers a breakthrough of new and enhanced features. Scan speed is almost 100 channels per second. You get four digit readout past the decimal point. Complete coverage of 800 MHz. band when programmed with a personal computer. Alphanumeric designation of channels, separate speaker, backlit LCD display and more. To activate the many unique features of the Uniden MR8100 a computer interface program is available for $19.95. Due to manufacturers' territorial restrictions, the MR8100 is not available for *direct* shipment from CEI to CA, OR, WA, NV, ID or UT.

NEW! Ranger® RCI2950-A3

List price $549.95/**CE price $259.95/SPECIAL**
10 Meter Mobile Transceiver • Digital VFO Full Band Coverage • All-Mode Operation Backlit liquid crystal display • Repeater Splits RIT • 10 Programmable Memory Positions
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The *Ranger* RCI2950 Mobile 10 Meter Transceiver has everything you need for amateur radio communications. The RF power control feature in the RCI2950 allows you to adjust the RF output power continuously from 1 watt through a full 25 watts output on USB, LSB and CW modes. You get a noise blanker, roger beep, PA mode, mike gain, digital VFO, built-in S/RF/MOD/SWR meter. Frequency selections may be made from a switch on the microphone or the front panel. The RCI2950 gives you AM, FM, USB, LSB or CW operation. For technical info, call Ranger at 619-259-0287.

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LMV2548B
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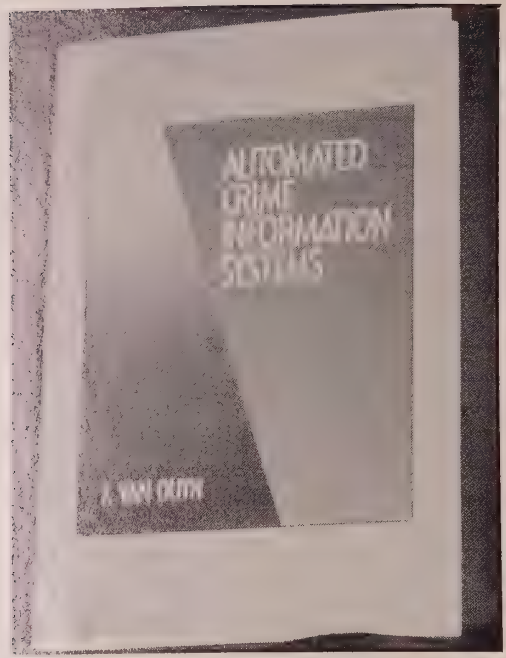


Crime Time, Live!

By 1985, nearly all of the 60,000 federal, state, and local law enforcement agencies in the USA were linked to at least one of the nation's computerized crime information systems. Still, only a handful of computer specialists in the criminal justice field fully understood these intricate networks and their enormous potential as crime-fighting tools.

Now all law enforcement professionals; persons interested in law enforcement techniques and communications; and computer enthusiasts and professionals can gain a complete understanding of this important technology as it has evolved into its present network.

The 142-page hardcover book, *Automated Crime Information Systems*, by J. Van Duyn, provides a a complete, nontechnical introduction to all existing and planned systems of automated criminal records-gathering and dissemination in the nation. There are charts and tables to help illuminate the text.

This book has the latest information on things like: The FBI's criminal history and ID programs; NCIC; federal/state co-op efforts; useful software applications for law enforcement; centralized versus decentralized database computer systems; the laws governing accessed information; privacy and data security; DNA analysis for identifying criminal suspects, and more.

We especially liked Van Duyn's overviews of the Intellect Investigations System, an artificial-intelligence-based system, and the California Automated Identification System (CAL-ID), an automated fingerprint matching and identification network that is a worldwide model for such programs.

For anyone who is currently in law enforcement or is planning on becoming a part of the criminal justice system, *Automated Crime Information Systems* will be an information-filled and lasting reference to have on hand. We liked the book, and think you will, too. The author is a criminal justice information systems instructor at California State University, Sacramento, and the California Police Institute.

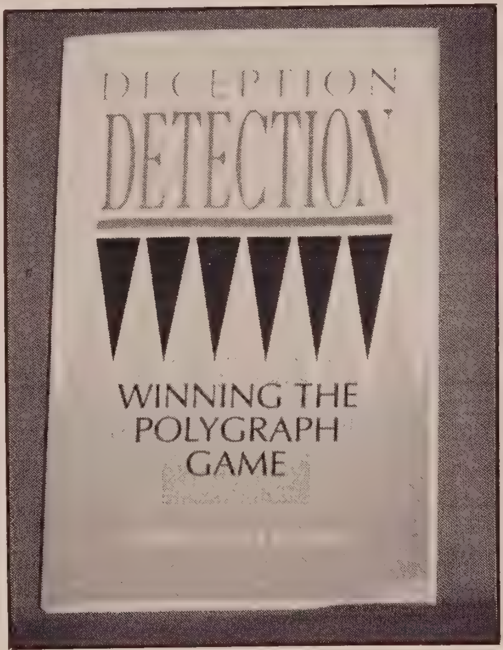
This book is $22.95 ($29.50 in Canada) from TAB Professional and Reference Books, Blue Ridge Summit, PA 17294-0850. The Order Number of the book is 3503.

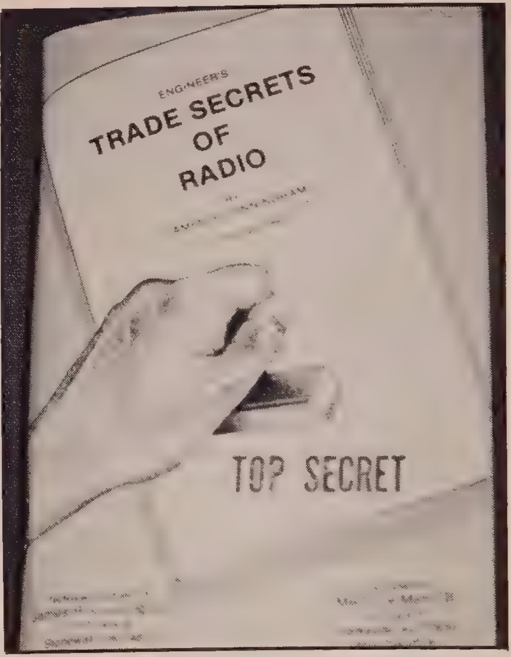
Forked Tongue

Because it's human nature to tell a lie, or even a slight fib, now and then, the search for an effective way of detecting such deceptions dates back ages. The results ranged from the bizarre and ridiculous to the severe and inhumane.

In 17th Century Salem, Mass., the popular theory was that witches would float on water like corks. When asked by the witch hunters if they were witches, most accused persons denied the charges. Their veracity was sometimes tested by tossing them in a deep pond. If they floated, they were assumed to have lied. So they were fished out and hanged. If they sank and didn't come back up to the surface, it was assumed they had been telling the truth. A few of the waterlogged people deemed truthful were still alive by the time they were located underwater and dragged back to the shore.

Bedouin tribesmen of the Mideast required conflicting witnesses to lick a red hot iron; the witness whose tongue was seared and blistered was assumed to be the liar.





The threat of using that method probably was all that was needed to assure truth in virtually all testimony!

While today's high-tech approach, the polygraph (lie detector) exam, isn't as physically hazardous, it has progressed little in terms of reliability and validity, and holds an equally awesome potential for wrecking the lives and reputations of innocent citizens.

Each year in the USA, as many as 4-million people are wired up to the various electrodes that are required for their words to be given a thumbs-up or thumbs-down by a polygraph. About 40 to 50 percent are erroneously branded as liars! Government studies have found polygraph accuracy to be as low as 50.6 percent. You can *guess* and be right half the time!

Richard Nixon once said of polygraphs, "I don't know how accurate they are, but I know they scare the hell out of people." That fear is the polygrapher's greatest weapon. So, is there any way, then to defend yourself? You bet!

The ammo to shoot the polygraph full of holes is in a 145-page book entitled, *Deception Detection*, by Charles Clifton. The author offers a detailed description of the ominous polygraph and describes how it is used. If you go before the thing to be judged, you'll know just what to expect.

Next, you'll learn the countermeasures to confuse the thing and either render the equipment totally useless and helpless—or put into action all the clever tricks to stack the cards in your favor and guarantee that the device will love you. These include a whole array of approaches, including physical, cognitive, and pharmacological.

Naturally, some effort is required. So there are practice tests included in the book to let you easily gauge your progress and ability to gain command over the device. These proven techniques and tactics will render the tricky polygrapher and his infernal machine impotent in their deliberate efforts to intimidate and manipulate you, scare you, trip you up, and make you look slimy. You'll out-fox the box.

Whether you're faced with a polygraph at a job interview, or at regular intervals where you're employed, this excellent book provides great ways of shutting this sleazy electronics device out as a relevant factor in your privacy or your life.

Deception Detection is $15.00, plus $4.00 for Book Rate mailing, or $6.00 for UPS. Order it from Paladin Press, P.O. Box 1307, Boulder, CO 80306. Residents of CO, please add 56 cents sales tax.

Here's The Inside Information

If you're a ham, an 11 meter communications enthusiast, an experimenter, a communications technician, or a broadcaster (legal or otherwise), chances are you'll find a lot to like in the 140-page book, *Engineer's Trade Secrets of Radio*, by James R. Cunningham.

It's brimming over with information on things like coil winding; modulation and transformers; wire antennas for the AM broadcast band; insulators; audio and power transformers; making your own components; taking antenna measurements; building base station linears and a 1 kW plate modulated broadcast transmitter; secret equipment sources, etc., etc.

Plenty of photos, schematics, diagrams in this sourcebook. It's chock full of projects and clever signal enhancement ideas that you don't normally come across and can't locate no matter how hard you look in the usual reference publications. Note that some projects described aren't legal for use in the USA.

Cunningham, who is a professional radio engineer living in Oklahoma, knows his topic well, and writes in a clear and easy-to-understand manner. Terms that might require clarification are given sufficient explanation to make them fit in comfortably, like old friends. He's done a good job in this interesting, unusual, and most useful communications book.

Engineer's Trade Secrets of Radio, is $19.95, plus $3.50 for UPS shipping to addresses in the 48 contiguous states (sent by 1st Class Mail to Canada/APO/FPO/AK/HI/PR/VI addresses). Order it from CRB Research Books, Inc., P.O. Box 56, Commack, NY 11725. Residents of NY State, please add $1.60 sales tax.

In Addition . . .

Sams, of 11711 N. College Ave., Suite 140, Carmel, IN 46032, didn't send any actual copies for us to eyeball in the flesh, but they did tell us that they have some books in which our readers might be interested. These are designed for computer users, and include: *The First Book of Fastback Plus*, by Jonathan Kamin (299 pages, $16.95); *The First Book of Microsoft Excel for the PC*, by Chris Van Buren (288 pages, $16.95); *Macintosh Printer Secrets*, by Larry Pina (408 pages, $34.95); *UNIX Applications Programming: Mastering the Shell*, by Ray Schwartz (452 pages, $26.95); also *The Best Book of PFS: First Choice*, by Joseph Wikert (514 pages, $24.95). Contact Sams directly for additional information on these since we can't don't have any more than we passed along to you on these titles. ■

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CIRCLE 14 ON READER SERVICE CARD

Backstage (And Onstage) With Your Scanner

Find Those Hidden Frequencies And Enjoy The Best Seat In The House!

BY DAVE BEAUVAIS, KB1F

It's always prime season for sporting and concert events at our country's major stadiums. And FM radio plays a critical role in the nuts-and-bolts management of many of these facilities. Since we've recently enjoyed a couple of very successful frequency sleuthing operations at major rock concerts, we thought we'd share some of our findings and techniques to help you join in the fun.

Our first textbook case holds a special interest for scanner owners in the Albany, New York area, but the techniques we used to crack the security network of the brand new Knickerbocker Arena will work anywhere. Opened late in 1989, this ultra-modern indoor facility has a seating capacity of 16,000-plus patrons, and has already exerted a very positive impact on the local economy.

I recently had the pleasure of exploring "The Knick" during a three-day invasion by the legendary Grateful Dead rock band, and their captivating tie-dyed followers known as the Deadheads. I decided to spend one of those three concert evenings camped out on the roof of the parking garage across the street, armed with a simple array of electronic tools to probe the "radioactivity" of "The Knick" at full throttle. We began with no prior information about the radio status of the facility. And we hit pay dirt. Since the facility is so new, its internal security frequencies have yet to be published in any major scanner guide. Here they are: 464.375-Simplex-Concessions; 464.475-Simplex-Concessions; 464.500-Simplex-Crowd Security; 464.575-Simplex-Backup Crowd Security; 464.975-Repeater Output-General Building Security and Operations; 469.975-Simplex-Input to 464.975 repeater.

During this concert, a special imported security detail from New Jersey, known as "The A-Team" (or so their jackets proclaimed) operated on 464.500, with supervisors communicating on 464.575 as well. The in-house Knickerbocker Arena security personnel used the 464.975 MHz repeater. Food and souvenir concessions were heard placing orders for more supplies and requesting supplemental personnel on 464.375 and 464.475. All three major VHF/UHF utility bands were searched closely, and no additional frequencies were located. Everything in "The Knick" is placed very tightly between 464 and 465 MHz—which makes good sense, as the radios in use appear to be 5-channel models with slim UHF rubber ducks.

The repeater output might have been easy enough to locate with a scanner in search mode, but how did we come up with that full bench of simplex frequencies? Our initial probe with a frequency counter yielded nothing. The security transmissions were much too short, and it was impossible to stand close enough to radio-toting personnel to get a good frequency lock. So we took to the garage roof for a more leisurely penetration effort.

For situations like these, we've found that an inexpensive, multi-band portable radio with quick tuning capability is essential. We use a six band Radio Shack Patrolman which costs about 60 bucks. Your radio need not be expensive, but it should cover the 30-50, 140-174, and 450-480 MHz bands with easy switching capability. The object is to be able to cover large chunks of spectrum very rapidly, sweeping back and forth with the tuning knob until a promising signal is heard. Even with poor calibration, and indifferent sensitivity and selectivity of most of these radios, you'll normally be working so close to the target transmitter that these faults will not be a problem. (The lack of selectivity is actually a plus, as we'll see in a moment.)

Once a target signal is heard on the portable, it's necessary to guess the approximate frequency. Resolution down to 1 MHz is quite easy with a bit of practice. A good training exercise is to familiarize yourself with the place on the dial where stations of known frequency (such as your local police and fire departments) are located. Once you get the feel of the radio's alleged calibration, you should be able to narrow down any station to about a half-megahertz frequency range with little problem.

Now you're in good position to fire up your scanner and nail that mystery transmitter to the wall! Set your SEARCH limits about one megahertz above and below the approximate "guess" point of the frequency you're reading on your portable. Keep the portable radio running, and when you hear the target transmitter key up, watch for the scanner to lock in on the exact operating frequency. Searching within such narrow limits (because you did all the preliminary "barn door" work with your quick-tuning portable), it shouldn't take longer than 30 seconds for your scanner to make the hit. Write down the frequency, or program it into your scanner for future use.

In practice, we've found that two scanners can be of great help here—and don't turn off the portable radio either. Once we located the main repeater output of "The Knick", and programmed 464.975 into one of the two available scanners, we noticed that the portable radio was still hearing security transmissions that were not coming through the repeater. (This is where the lack of selectivity works to your advantage: it lets you see what's going on "around" the frequency to which you're tuned.) So we resumed the process of matching the signals heard on the portable radio to the signals found by the second scanner, which remained in search mode between 463 and 465 MHz.

As each new frequency was found, we programmed it into the first scanner. Every time the portable radio produced a transmission which was not being heard over the first scanner, which sampled the accumulated bank of "found" frequencies, we knew the job was not quite finished. In the end, the Knickerbocker delivered quintuplets—a litter of five frequencies (plus the odd repeater input) listed earlier.

There may have been a bit more radio activity by the technical crew supporting the band. We noticed at the previous night's concert that the sound engineer was wearing a headset connected to a box on his belt, with no visible cabling. Most likely this was a 100 milliwatt 49 MHz FM unit, whose transmissions were not making it through the thick walls of the arena. These units use five very well-known frequencies between 49.8 and 49.9 MHz, through nothing revelant was heard on any of them from the roof of the parking garage. Just for the record, when you see one of these little gizmos in operation, monitor: 49.830, 49.845, 49.860, 49.875, and 49.890.

I think you'll find that this technique based on the quick access capabilities of an inexpensive VHF/UHF portable radio will pay off in the most demanding field situations. It really does the trick when you haven't got a clue to what band is in use, and you need to cover a lot of possibilities very rapidly.

We made our successful penetration of "The Knick'"s multi-channel operations, I might add, while enjoying the Grateful Dead concert itself as it was broadcast live over a local FM station.

Turning to a second major find of the concert season, there is one little-noticed part of the spectrum that should be searched for activity whenever a stage show is in town. This is the bank of "wireless microphone" channels between 174 and 200 MHz. Whenever you see a singer (or sometimes an instrumentalist) moving about with no connecting cables, he or she is using one of these wireless FM units. There is in fact a published, channelized band plan used by many high-quality commercial wireless microphones, which often can be heard up to a quarter-mile from the site of operations. The frequencies to check are these: Channel 0, 174.600; Channel 1, 1177.600; Channel 2, 181.600; Channel 3, 183.600; Channel 4, 186.600; Channel 4, 186.600, Channel 5, 190.600; Channel 6, 192.600; Channel 7, 195.600; Channel 8, 196.600 and Channel 9, 199.600.

There is some method to this frequency madness. Most of these wirelss mikes operate in unused segments of normal VHF television channels—very often in the "guard band" of unused frequencies which separate the video and audio portions of a television channel. The rationale is that since these guard frequencies are not officially allocated, the wireless mikes are not likely to collide with cordless telephones, security walkie-talkie, or other electronic devices.

In fact, at a recent stopover by musician and performance artist Laurie Anderson in Northhampton, MA, we really hit the jackpot. Laurie uses a wireless FM mike for part of her show. When she's not singing into it, it simply sits in a stand on the stage, where it continues to broadcast whatever is being heard over the stage monitors. After finding her frequency, we were able to enjoy the entire concert in the comfort of our car, just as if we had been allowed to place a radio "bug" directly on stage next to the artist!

Laurie's microphone fell outside the published band plan, but well within the frequency rationale. She broadcasts on 185.400 MHz, which is inside the guard band that separates the video and audio portions of TV Channel 8. We located her frequency simply by searching up from 174 to 200 MHz, when it became clear that we weren't finding her on any of the published channels. Since a wireless microphone runs continuously during a stage show, you'll have no trouble finding it by using the search mode on your scanner. It's a real piece of cake, once you know where to look.

For the record, some older wireless units can be found on odd frequencies between 72 and 76 MHz, though activity there is much less common than on the unused portions of the VHF TV channels.

By the way, is it legal to monitor these things? Absolutely! Cordless devices were specifically exempted from all provisions of the ECPA (Electronic Communications Privacy Act) when the legislation was passed.

So next time you venture out to a major concert, don't forget to bring your multi-band portable and pocket scanner. Now that you know where to look for all the action behind the scenes, you may find yourself enjoying "the best seat in the house" without even buying a ticket! ■

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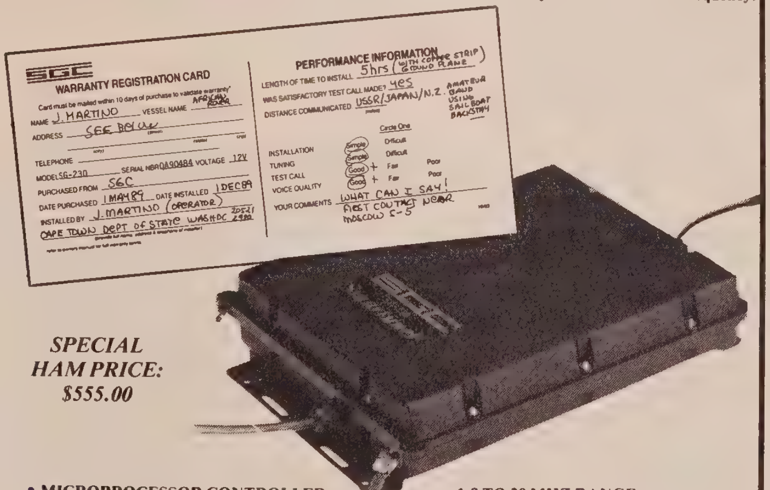

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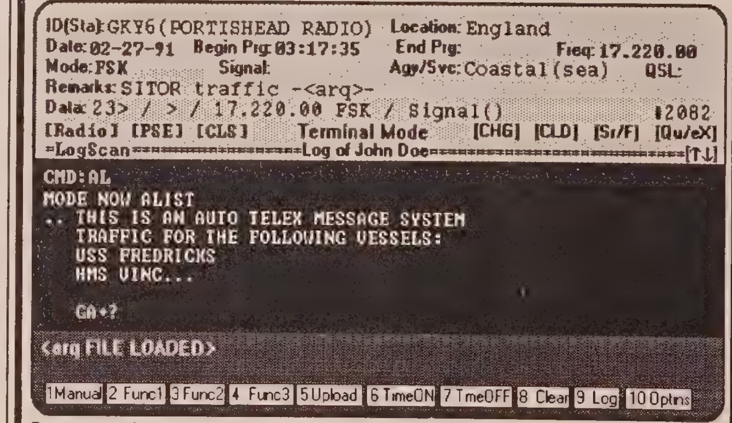
CIRCLE 16 ON READER SERVICE CARD

SCORPIO



```
ID(Sta):GKY6(PORTISHEAD RADIO)  Location: England
Date:02-27-91  Begin Prg:03:17:35   End Prg:            Freq:17.220.00
Mode:FSK          Signal:           Agy/Svc:Coastal(sea)   QSL:
Remarks:SITOR traffic -<arq>-
Data:23> / > / 17.220.00 FSK / Signal()                        #2082
[Radio] [PSE] [CLS]      Terminal Mode      [CHG] [CLD] [Sr/F] [Qu/eX]
=LogScan===================Log of John Doe========================[↑↓]
CMD:AL
MODE NOW ALIST
.. THIS IS AN AUTO TELEX MESSAGE SYSTEM
   TRAFFIC FOR THE FOLLOWING VESSELS:
   USS FREDRICKS
   HMS VINC...

   GA+?
<arq FILE LOADED>
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CIRCLE 4 ON READER SERVICE CARD

TELEPHONES ENROUTE

BY TOM KNEITEL, K2AES

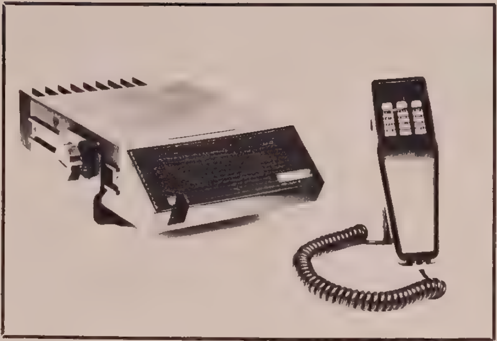
WHAT'S HAPPENING WITH CELLULAR, MARINE & MOBILE PHONES

Some motorists find that cellular coverage is more than a little frustrating. This is mostly because there are so many areas where it doesn't exist. It shouldn't come as too big a shock, since cellular service was conceived and designed with metro areas in mind.

Those who regularly venture forth into rural or wilderness areas, National Parks, and down long stretches of "nowhere" highways between population centers have gotten used to seeing the "No Service" words flash on their cellulars. This includes long haul truckers, people in RV's, and those whose happen to live, work, or play in such areas. And, of course, those drivers "just passing through."

Cellular technology calls for low-power, limited-range transmitters, mostly operating from low-elevations. Metro areas are divided up into a grid of small communication zones (called "cells"), in order for banks of channels used in the cells to be used by other local cells a few miles distant without fear of interference. This idea is perfect in and around places like Los Angeles, Chicago, Atlanta, New York, Seattle, Toronto, Boston, Dallas, Columbus, etc., where it meets many needs. For many other areas, though it doesn't always fill the bill.

But cellular has received so much media coverage as "the" car phone system, it's worth a reminder now and again that it certainly isn't the only car phone system. In



This IMTS car phone is the Transcon TC-105, made in Canada. It's available in the USA, too. It can operate on all US and Canadian VHF telco and RCC channels, plus maritime telco channels, and can be field programmed on twenty channels.

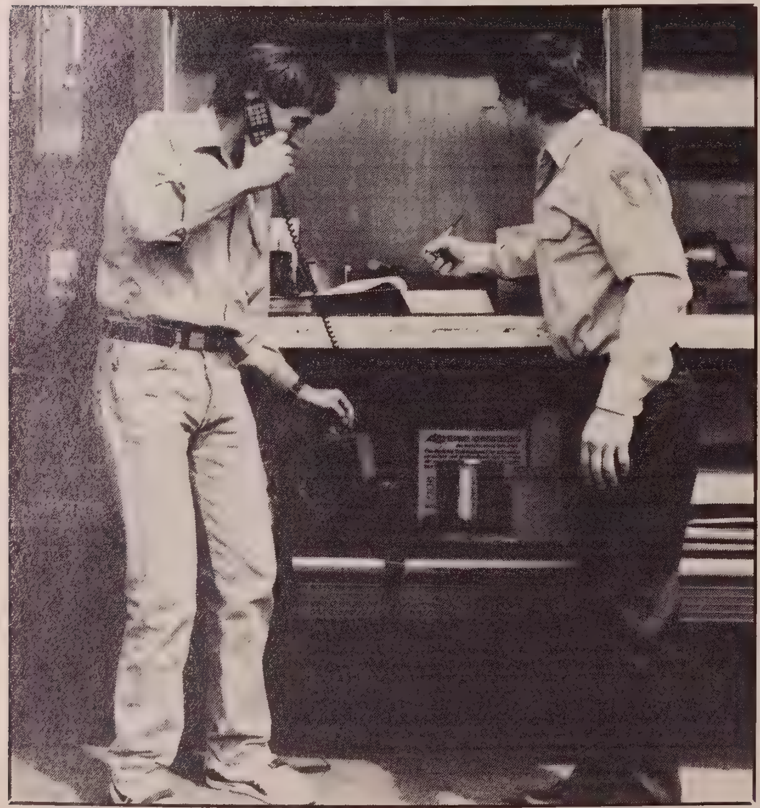
fact, in the USA alone, there is a network of more than 2,000 terminal (transmitter) sites that offer mobile phone service having nothing to do with cellular. And these are operated by Pacific Bell, Illinois Bell, Contel, Mountain Bell, Southwestern Bell, and numerous other companies, large and small.

Called "Improved Mobile Telephone Service," this system operates with bases in the 152 MHz and 454 MHz bands and mobile units in the 157 MHz and 459 MHZ bands. In about 80 percent of the cases, IMTS offers direct dialing capabilities. It works in major cities, and also on thousands

The Mark II handheld from GCS Electronics is an IMTS unit.

upon thousands of miles of open road and rural highway where there is no cellular service.

IMTS is the original pre-cellular car phone service, only now it has been considerably



NYNEX Mobile Communications recently donated two cellulars to the Berkshire County (NY) Hazardous Materials Response Team. With the transportable phones, the team can contact chemical manufacturers from hazardous waste spill sites in order to expedite clean-up procedures.

Chris Isola, President of the Westhampton War Memorial Ambulance Association (NY), uses the group's new cellular to communicate a patient's vital signs to a local hospital. The cellular was donated by the NYNEX Cellular Center, St. James, NY.

WESTHAMPTON
WAR MEMORIAL
VOLUNTEER AMBULANCE

The New York City Parks Department just installed four cellulars in their Special Events Mobile Command Post. The phones give parks personnel on-site communication capabilities to help coordinate the many large-scale public events held in New York's parks. The cellulars were donated by NYNEX Mobile Communications. The photo shows NYNEX executives presenting the phones to city officials.

updated with newer technologies of its own. Similar in many ways to the convenience of cellular service, it doesn't use the short-range grid technology upon which 800 MHz cellular car phone service is based. To place an IMTS call, you dial your number and press "send." There's no "push-to-talk" button. Answering an incoming call just means picking up the handset when the unit rings.

IMTS car phones now offer memory dialing, last number redial, security lockout, self-answering if you're out of the vehicle (with the caller's number displayed on the phone's LED display), plus other excellent features.

While cellular service is designed to provide high capacity service within a limited metro area, IMTS is suited to providing maximum coverage and the ability to offer car phones roaming service all around the nation with a single telephone number (and no "roamer" charges).

From a technical standpoint, it's an approach opposite that of cellular service. Rather than placing a multitude of short-range transmitters at many low-elevation sites (as with cellular), IMTS has high power transmitters at high elevations such as mountain tops and tall buildings. IMTS base stations may put out as much as 50 times as much power as a typical cell site transmitter.

The Terk CFR-900 is a revolutionary new cellular antenna.

Radio Shack's Tandy CT-302 is small in size, but full-featured.

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GAIN: 16.5 DB
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SIDE REJECTION: 50-55 DB True
BACK REJECTION: 40 DB True
WEIGHT: 37 lbs.
LENGTH: 17 ft., 6 in.
SWR: 1.1
HORZ. to VERT. SEPARATION: 25-30 DB
WIND SURVIVAL: 100 MPH
POWER MULTIPLICATION: 65X
AUDIO GAIN: 22 DB
WIND LOAD: 5.2

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TYPE: Horz. & Vert. Polarization Single Feed
GAIN: 15.5 DB on DX
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BACK REJECTION: 35 DB True
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CIRCLE 20 ON READER SERVICE CARD

Something new has been added to Mitsubishi's cellular FAX unit, the Acces.

maxon
maxcall
On-Site Paging System

Maxcall's on-site paging systems are adaptable to many different types of applications requiring 2 to 100 watt coverage.

The IMTS car phones run up to 30 watts. In the 152/157 MHz band, especially, these units offer significant range improvement over 800 MHz cellular communications. Typical calling range is 30 to 40 miles, although 70 mile range has been achieved under optimum conditions.

Since cellular is the only car phone service being pushed by phone companies, you may have to do some persistent digging at the local level to get information on equipment and opening an IMTS service account. For some odd reason, phone companies sometimes pretend they only know about cellular, playing dumb when asked about IMTS. One immediately suspects that cellular brings in more income.

One good looking IMTS unit I recently saw was the Transcon TC-105. You can find out more about this from Transcon Industrial Corporation, 1527 Keehn Rd., Kelowna, BC, Canada V1X 5T5.

About two years ago, we received information on an IMTS handheld telephone known as the *Mark II*, made by GCS Electronics, Inc. The most recent address we have is 18200 Von Kamen Avenue, Suite 700, Irvine, CA 92715. This may still be a good address.

Tiny 'Tenna

A new miniature cellular antenna known as the Terk CFR-900 is claimed to offer "significantly superior performance" over standard whip-type cellular mobile antennas. Yet, the Terk CFR-900 has such a revolutionary design that it doesn't look like any other antenna we have ever seen.

This is an omnidirectional type antenna, and is intended to be used as a complete unit with the proper 12.5 ft. length of coaxial cable supplied by its manufacturer. It is intended for mounting inside the vehicle where, the manufacturer claims, it will be safe from vandalism and theft and doesn't need to be removed when the vehicle goes through a car wash. It needs no drilling, tuning, or adhesives. The VSWR is less than 1.3:1.

The MSRP of this new antenna is $79.95. It comes from Terk Technologies Corp., 233-8 Robbins Lane, Syosset, NY 11791.

Handy Tandy

Radio Shack introduced the Tandy CT-302 handheld portable cellular. Weighing in at less than 1 lb. (including battery), the CT-302 has a full range of features. It's about the size of a pocket stereo player.

Some of these features include illuminated LCD display with backlit controls; one-touch last-number redial; electronic security lock that allows only 9-1-1 calls to go through while turned on; scratch-pad memory; signal strength and status indicators; call timer; dual NAM capability; two-digit quick dial-up of up to forty numbers containing as many as sixteen digits each. There's a built-in antenna for close-in coverage, and a pull-out antenna for fringe area calls. It comes with a battery charger and carrying case.

Options include a mobile mounting kit; a cigarette lighter power cord and quick-charger for the battery; a quick-charger (one hour) for desktop use; and extra battery packs.

The Tandy CT-302, sold at all Radio Shack stores, sells for $499 if you buy it with activation and a minimum service commitment offered by Radio Shack. It's $799 without service activation.

Cellular FAX

Mitsubishi International Corporation brought out a second generation of Acces portable cellular FAX machines. Now the popular cellular FAX machine is available with a DC power adapter as a standard feature. The updated machine offers all of the original Acces unit's features, in addition to the newly added DC power capabilities.

It's from Mitsubishi International Corporation, 1500 Michael Drive, Suite B, Wood Dale, IL 60901.

A New Page

Maxon Paging Products, Inc., announced two Maxcall on-site paging systems.

The first system is the Maxcall Multi-format type. It was created to provide automatic, full-featured paging in a single, compact package. The heart of all Maxcall systems is the APT-25 terminal. Each system incorporates software for the most common paging formats, such as Pocsag Digital Numeric Display, 2-tone, 5-tone, and combined Pocsag Numeric Display/Voice Paging.

Standard features include talk-back paging, telephone interface, 1000 pager capacity (each programmed independently with any supported format), and transmitter options from 2 watts to 100 watts.

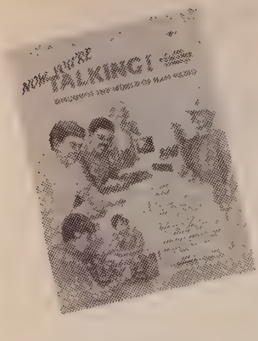
The second type of system is for Maxcall Pocsag-only paging. It is intended for on-site paging in those applications where an operator is available and the reliability of digital paging is essential. These systems can be customized to cover anything from a single building to a shipyard, a convention, an airport, an office or industrial complex, or a college campus.

The standard Maxcall Pocsag System provides numeric display paging. Adding a desk mike, allows sending a numeric and a voice message simultaneously. No set up or installation is required.

For more information, contact Maxon Paging Products, Inc., 10828 N.W. Airworld Dr., Kansas City, MO 64153.

Let's Hear From You

Send along any questions or comments, news clippings, photos, or suggestions. They can relate to car phones, radio paging, marine or air/ground phones. We also invite new product information and photos, as well as industry news. ■



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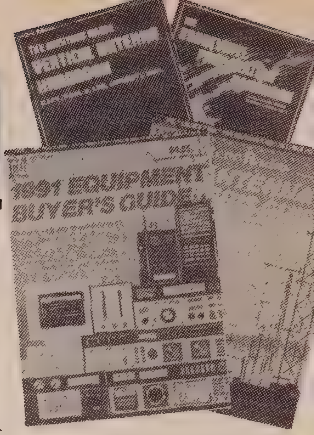

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SHORTWAVE RECEIVERS Past and Present edited by Fred Osterman
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Things That Go Beep In The Night

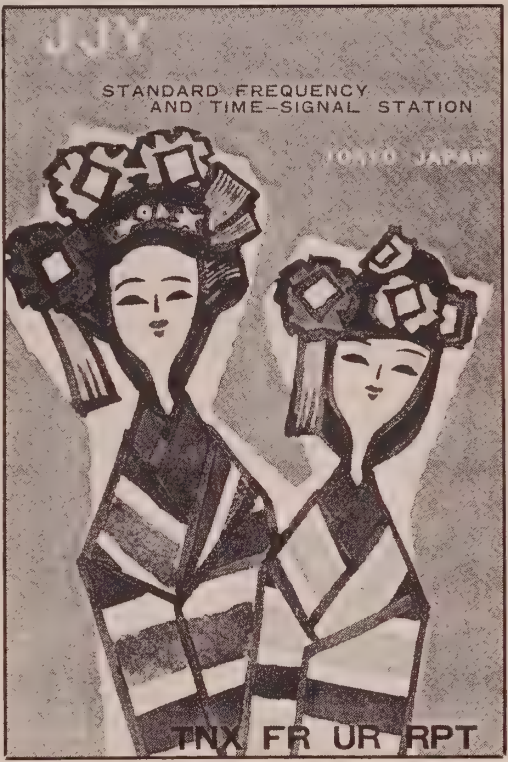
When I was a new SWL, I was always fascinated by radio station WWV, then in Greenbelt, MD. (Yeah, I *am* getting old!) It seemed like such a wacky idea—a radio station that did nothing but give the time each minute, like an electronic version of news announcer Frank Blair on the old version of the *Today* show! I soon discovered that WWV had company, as other stations throughout the world also give standard time and frequency services to listeners. Many of these can be easily heard and logged with a little effort. This month, let's take a look at some of them.

The Americas

If you're familiar with WWV, you've probably heard CHU, Canada's official time and frequency station operated by their National Research Council from a site near Ottawa. CHU operates continuously on 3330, 7335 and 14670 kHz and gives time announcements each minute in English and French. In between the announcements are beeps each second. If you hear them you can send reception reports to CHU, National Research Council, Ottawa, Ontario, Canada, K1A 0R6.

Ecuador is home to the widely heard HD210A on 3810 and 7600 kHz. Operated by the Ecuadorian Navy, HD210A can be easily heard from about 0100 to 0600 UTC most days. You won't hear an identification except immediately before the hour, when an announcement in Spanish is given. However, there are time announcements each minute in Spanish, and their pattern of time pulses is quite distinctive. If you hear them, send your report to Casilla 5940, Guayaquil, Ecuador. Send along return postage with your report in the form of mint stamps or three International Reply Coupons.

Don't think that the presence of WWV on 5000, 10000 and 15000 kHz means you can't hear anything else on those frequencies. Signals from WWV are frequently weakened for a period about a half hour before and after your local sunrise and sunset, and ionosphere storms and solar flares can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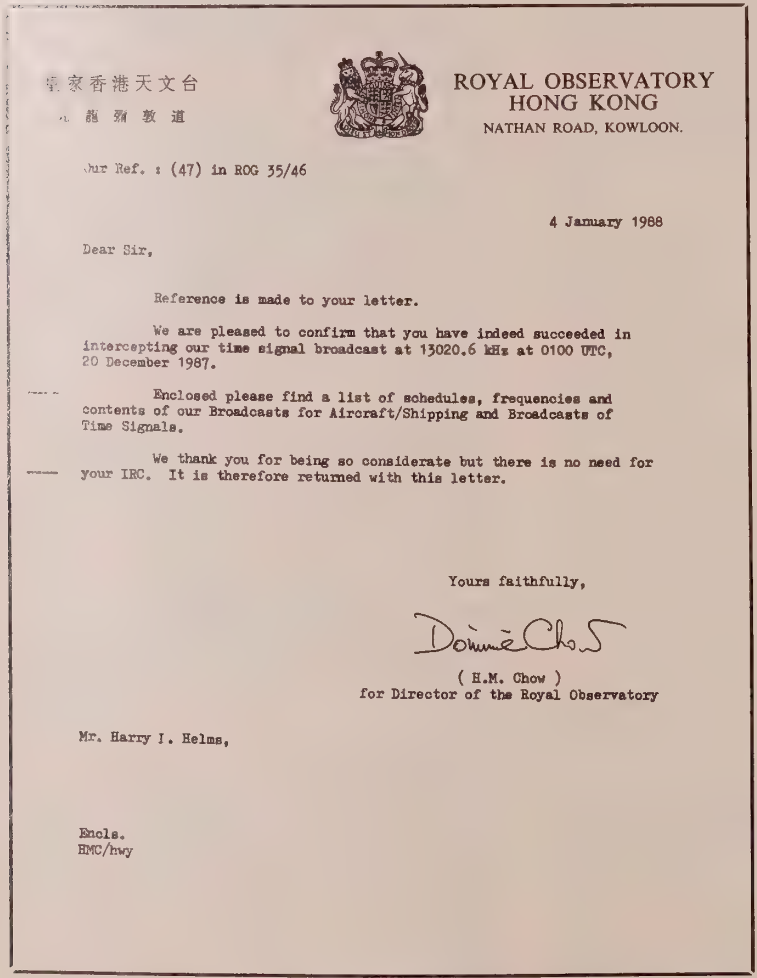

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ROYAL OBSERVATORY
HONG KONG
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Our Ref. : (47) in ROG 35/46

4 January 1988

Dear Sir,

Reference is made to your letter.

We are pleased to confirm that you have indeed succeeded in intercepting our time signal broadcast at 13020.6 kHz at 0100 UTC, 20 December 1987.

Enclosed please find a list of schedules, frequencies and contents of our Broadcasts for Aircraft/Shipping and Broadcasts of Time Signals.

We thank you for being so considerate but there is no need for your IRC. It is therefore returned with this letter.

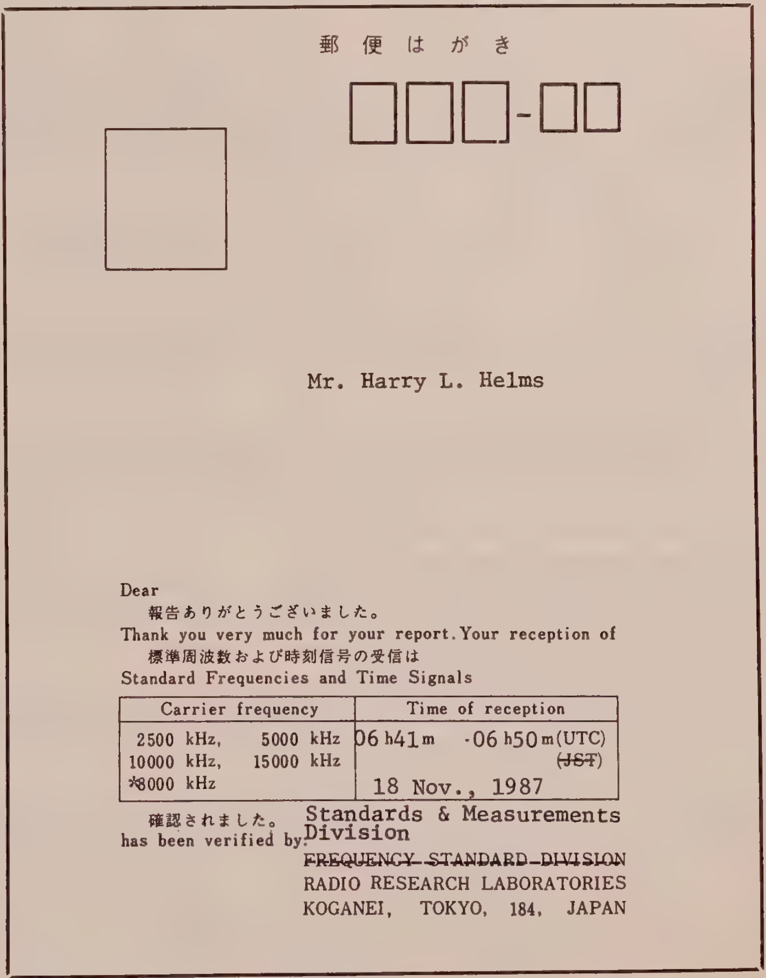
Yours faithfully,

Dominic Chow

(H.M. Chow)
for Director of the Royal Observatory

Mr. Harry I. Helms,

Encls.
HMC/hwy



郵便はがき

□□□-□□

□

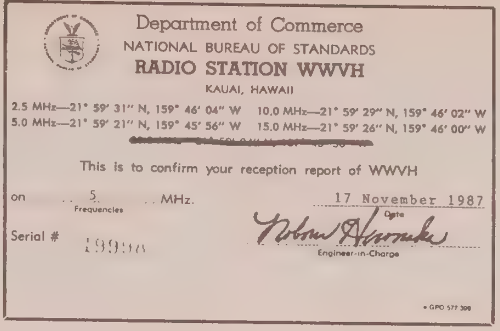
Mr. Harry L. Helms

Dear
報告ありがとうございました。
Thank you very much for your report. Your reception of
標準周波数および時刻信号の受信は
Standard Frequencies and Time Signals

Carrier frequency	Time of reception
2500 kHz, 5000 kHz 10000 kHz, 15000 kHz *8000 kHz	06 h41 m -06 h50 m(UTC) (~~JST~~) 18 Nov., 1987

確認されました。
has been verified by: Standards & Measurements Division
~~FREQUENCY STANDARD DIVISION~~
RADIO RESEARCH LABORATORIES
KOGANEI, TOKYO, 184, JAPAN

also unexpectedly weaken WWV. In these cases, one of the most common stations to sneak in under WWV is LOL in Buenos Aires, Argentina. LOL's schedule is a bit sporadic, as it only operates one hour at a time beginning at 1100, 1400, 1700, 2000 and 2300. The format is downright complex, including such things as lengthy pulses, time announcements in Spanish, and "pips" for each second. They do verify correct reports sent to Observatorio Naval, Avenida Espana 2099, 1107 Buenos Aires, Argentina.



Department of Commerce
NATIONAL BUREAU OF STANDARDS
RADIO STATION WWVH
KAUAI, HAWAII

2.5 MHz—21° 59′ 31″ N, 159° 46′ 04″ W 10.0 MHz—21° 59′ 29″ N, 159° 46′ 02″ W
5.0 MHz—21° 59′ 21″ N, 159° 45′ 56″ W 15.0 MHz—21° 59′ 26″ N, 159° 46′ 00″ W

This is to confirm your reception report of WWVH

on 5 MHz. 17 November 1987
Frequencies Date

Serial # 19998 Engineer-in-Charge

GPO 577 399

Hawaii The Easy Way

Hawaii has no international shortwave broadcast stations, and hearing it on the AM broadcast band is a real bear unless you're located near the Pacific coast. Probably the easiest way to nab this radio "country" is through WWV's sister station, WWVH. "Sister" is the appropriate adjective for WWVH, since it uses a female voice to announce the time and give station identifications. Like WWV, WWVH can be heard on 2500, 5000, 10000 and 15000 kHz.

WWVH is surprisingly easy to hear if you tune at the right time. During the early evening hours (approximately 0000 to 0500, depending on your location), WWVH can usually be located on 15000 kHz. Later in the evening, after 0600, WWVH can be found on 2500, 5000 and 10000 kHz until your local sunrise. The time signals for WWV and WWVH are sent so precisely that you will only hear one set of second pulses if both are coming in. However, WWVH gives its time announcement and identification *before* WWV does, allowing you to positively identify it. If you do hear WWVH—you shouldn't have much trouble—you can send your reception report to Box 417, Kekaha, Kauai, HI 96752.

Old Friends Return From The Dead

For many years, North American SWL's could easily hear time signals from Australia's VNG because it operated on frequencies such as 7500 kHz, which are clear of interference. Then VNG was taken off the air due to Australian government budget cuts. A couple of years ago, it returned to the air, but unfortunately on the same frequencies as WWV and WWVH. Needless to say, this made reception in North America almost impossible.

Fortunately, VNG began operations on 16000 kHz in the spring of 1991. This new transmitter puts good signals into North America during the late afternoon and early evening hours. There are pulses each second, and the best time to listen for an identification is at the top of the hour. Reports go to GPO box 1090, Canberra, ACT, Australia, 2601.

Hear Time In Japanese!

Yep, it's possible if you tune 8000 kHz for JJY. JJY is Japan's answer to WWV/WWVH, and like those stations operates on 5000, 10000 and 15000 kHz. Fortunately, the 8000 kHz channel is often well heard after if fades in after about 0700. JJY identifies each ten minutes using both Morse code and a woman's voice. However, unless you speak Japanese you won't be able to understand her time announcement! JJY verifies reports sent to Communications Research Laboratory, 2-1 Nukui-Kitamachi 4-chome, Koganei-shi, Tokyo 184, Japan.

Russian Riddles

The Soviet Union operates a couple of time signals stations which are heard in North America. Unfortunately, these sta-

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DX Rated! 150 watts of exceptionally clean RF output. Easily drives big amplifiers to maximum power.

Twin Passband Tuning with **separate controls for second and third IF stages!** Increases selectivity and narrows bandwidth, independently varies low and high frequency response, or functions as IF shift. **It's DX'ing Dynamite!**

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CIRCLE 79 ON READER SERVICE CARD

POP'COMM's World Band Tuning Tips

October, 1991

This PopComm feature is designed to help you hear more shortwave stations. Each month, this handy, pull-out guide shows you when and where to tune to hear a wide variety of local and international broadcasts on shortwave.

The list includes broadcasts in many languages besides English. Most of the transmissions are not beamed to North America. Keep in mind that stations make frequent changes in their broadcast times and frequencies. Changes in propagation conditions may also make some stations difficult or impossible to receive. Your own equipment and receiving location will also have a bearing on what stations you are able to hear.

Note: EE, SS, FF, etc. are abbreviations for English, Spanish, French and so on. Some frequencies may vary slightly. All times are in UTC.

Freq.	Station/Country	UTC	Notes
3235	Radio West New Britian, PNG	1100	
3270	Ecos del Oriente, Ecuador	to 0300	SS
3270	Radio Namibia	0445	
3295	INBS, Iceland	0400	Icelandic
3300	R. Cultural, Guatemala	0400	
3366	GBC-2, Ghana	0530	
3380	Radio Chortis, Guatemala	0100	SS
3473	Radio Padilla, Bolivia	0000	SS
3925	Radio Tanpa, Japan	0900	JJ
4600	Radio Baghdad, Iraq	0230	AA
4600	Radio Perla del Acre, Bolivia	0000	SS
4750	Radio Bertoua, Cameroon	0500	
4755	Radio Educacao Rural, Brazil	0100	PP
4760	Radio Frontera, Venezuela	to 0300	SS
4770	Radio Nigeria, Kaduna	0500	
4785	Ecos del Combeima, Colombia	0200	SS
4800	LNBS, Lesotho	0400	
4800	La N, Dominican Republic	0300	SS
4805	Rdf. Amazonas, Brazil	0030	PP
4815	RTV Burkina, Burkina Faso	0600	FF
4820	LV Evangelica, Honduras	0300	SS
4830	Radio Tachira, Venezuela	0300	SS
4840	Voice of the Strait, China	1300	CC
4845	ORTM, Mauritania	0545	AA
4850	CRTV, Cameroon	0500	
4865	Caracol Aruca, Colombia	0600	SS
4870	ORTB, Benin	0600	FF
4870	Radio Rio Amazonas, Ecuador	0330	SS
4875	Super Radio, Brazil	0000	PP
4875	Voice of Jinling, China	1200	CC
4890	ORTS, Senegal	0600	FF
4890	R. Centinela del Sur, Ecuador	1100	SS
4904	RN Tachienne, Chad	0500	FF
4915	R. Cora, Peru	1000	SS
4915	GBC-1, Ghana	0600	
4920	ABC, Australia	0930	
4935	Kenya Broadcasting Corp	0200	
4940	Radio Continental, Venezuela	0400	SS
4960	Radio Federacion, Ecuador	0030	SS/local
4965	Radio Santa Fe, Colombia	1030	SS
4990	Radio Nigeria	0500	
5020	SIBC, Solomon Islands	0745	
5020	LV du Sahel, Niger	0600	FF
5025	Radio Rebelde, Cuba	0200	SS
5035	RTV Centrafricaine, Cent. Af. Rep.	0600	FF
5045	Radio Cultura do Para, Brazil	0300	PP
5047	RTV Togolaise, Togo	0600	FF
5063	Radio Progresso, Ecuador	0300	SS
5066	Radio Candip, Zaire	0330	FF
5536	Radio Ecos Especiales, Colombia	0300	SS
5915	Radio Alma Ata, Kazakhstan, SSR	0130	
5960	Radio Japan	0300	via Canada
5960	Radio Japan	0300	via Canada
5965	Radio Havana Cuba	0400	SSB tests
5995	RTV Malienne, Mali	0600	FF
6010	Radio Mil, Mexico	1130	SS
6045	Radio Melodia, Colombia	0700	SS
6065	Radio Super, Colombia	0000	SS
6088	Radio Esperanza, Chile	0830	SS
6090	Radio Bandeirantes, Brazil	0900	PP
6120	Radio Tirana, Albania	2200	
6135	Swiss Radio International	0200	
6135	Radio Santa Cruz, Bolivia	1000	sign on
6165	Radio Netherlands	0030	
6180	Radio Nacional Amazonia, Brazil	2230	PP
6230	Trans World Radio, Monaco	0345	sign on, GG
6250	Radio Nacional, Eq. Guinea	0500	SS
6300	Sani Radio, Honduras	1200	sign on, SS
6550	Voice of Lebanon	0500	AA
6576	Radio Pyongyang, North Korea	1130	
6724	Radio Satellite, Peru	0130	SS
7100	Voz. Res. do Galo Negro(clandestine)	2330	PP
7115	Radio Sofia, Bulgaria	0400	
7170	Radio Havana Cuba	2200	via USSR
7180	BBC	1300	via Hong Kong
7190	Radio Africa, Eq. Guinea	2230	
7208	La Voix du Zaire	0357	sign on, FF
7215	RTVI, Ivory Coast	2330	FF
7230	Radio Alma Ata, Kazakhastan, SSR	0130	
7260	Radio Vanuata, Vanuata	0700	EE/local
7270	Radio RSA, South Africa	0400	
7275	ELBC, Liberia	0700	
7285	RTM, Mali	0700	FF
7315	WHRI, Indiana	0430	
7345	Radio Prague Int'l, Czechoslovakia	0300	
7440	CPBS, China	1300	CC
7465	Kol Israel	0130	SS
7475	RTT, Tunisia	2300	AA
7516	CPBS, China	1400	CC
7520	WWCR, Tennessee	0400	
8000	JJY, Japan	1000	time signals
8300	New Star Broadcasting Stn., Taiwan	1100	CC numbers

Freq.	Station/Country	UTC	Notes
9115	Radio Continental, Argentina	0100	SS, feeder
9280	Voice of Asia, Taiwan	1400	CC
9345	Radio Pyongyang, North Korea	1100	KK
9360	Radio National Espana, Spain	0100	
9400	Radio Iran (clandestine)	0230	sign on, Farsi
9420	Voice of Greece	0200	Greek
9445	Voice of Turkey	0400	
9465	WMLK, Pennsylvania	1930	
9475	Radio Cairo, Eqypt	0200	
9480	Trans World Radio, Monaco	0756	sign on
9505	Radio Record, Brazil	0030	PP
9515	RAI, Sicily, Italy	0600	Italian
9525	Radio Marti, via VOA	0200	SS
9535	Swiss Radio Int'l	1200	
9540	Radio Nacional, Venezuela	0330	SS
9545	Deutsche Welle, Germany	0300	via Antigua
9555	Radio Portugal	2200	PP, weekends
9560	Radio Finland Int'l	0630	Finnish
9575	RAI, Italy	0100	
9580	Africa No. One, Gabon	0600	FF
9580	Radio Australia	1100	
9600	Radio Tashkent, Uzbekistan	1200	
9615	Vatican Radio	0250	
9620	Radio Havana Cuba	2330	SS
9630	Spanish National Radio	0230	FF
9660	Radio Rumbos, Venezuela	1030	SS
9660	ABC, Australia	0900	
9675	Radio Polonia, Poland	0600	
9685	Radio Japan	2200	JJ, via Fr. Guinea
9690	Radio Beijing, China	0300	via Spain
9695	Radio Sweden	0300	
9700	Radio New Zealand	1130	
9705	Radio Mexico Int'l	0200	SS
9735	Radio Nacional, Paraguay	2300	SS
9740	Radio Beijing	2200	via USSR
9750	Qatar Broadcasting System	2200	AA
9765	Voice of the Mediterranean, Malta	0600	sign on
9800	FEBC, Philippines	0930	
9800	Radio France Int'l	2200	FF
9810	Radio Russi, Russia	1100	RR
9820	Voice of the Arabs, Egypt	0500	AA
9835	Radio Budapest, Hungary	0130	
9840	Voice of Vietnam	1230	VV
9845	Radio Moscow	1100	CC
9870	Radio Austria Int'l	0130	
9870	KNLS, Alaska	1100	CC
9885	Swiss Radio Int'l	0200	
9910	BBC	2230	
9925	BRT, Belgium	2200	
9950	Radio Damascus, Syria	2200	
11040	CPBS, China	0900	CC
11335	Radio Pyongyang, N. Korea	0930	RR
11402	INBS, Iceland	0100	Icelandic
11588	Kol Israel	2230	
11620	Vatican Radio	0500	
11650	KTWR, Guam	1530	
11660	Radio Sofia, Bulgaria	1930	
11685	FEBC, Philippines	0900	
11710	RAE, Argentina	0200	
11715	KNLS, Alaska	0800	
11720	BBC	0400	AA, via Cyprus
11735	Radio Yugoslavia	0100	
11745	Vatican Radio	1345	
11770	Radio Kiev, Ukraine	0000	
11770	Radio Riga, Latvia	2300	
11780	Radio Nacional Amazonia, Brazil	2230	PP
11790	Spanish National Radio	1930	
11800	RAI, Italy	0100	
11805	Radio Globo, Brazil	2300	PP
11810	Radio Korea, S. Korea	0600	
11820	Radio Havana Cuba	0400	
11825	Radio Tirana, Albania	0230	
11835	SLBC, Sri Lanka	1100	
11840	Radio Japan	0200	EE/JJ via Sri Lanka
11840	Radio Moscow	2100	via Cuba
11865	Radio Denmark	0430	via Norway
11865	KTWR, Guam	1330	
11870	AWR Latin America, Costa Rica	1200	
11890	Radio Oman	1800	AA
11900	Radio RSA	0400	FF
11910	Radio Australia	1330	
11920	Radio Yerevan, Armenia	2200	Armenian
11930	Trans World Radio, Bonaire, Neth Ant.	0300	
11935	Radio Liberty, Germany	0630	Ukrainian
11940	Radio Romania Int'l	0358	sign on
11960	RTM Mali	1600	FF
11980	Radio Cairo, Egypt	1900	AA
11990	Radio Prague Int'l, Czechoslovakia	0000	
12005	RTT Tunisia	0530	AA
12010	Radio Austria Int'l	1830	FF
12035	Swiss Radio Int'l	0200	
12055	Radio Moscow	0100	
12085	Radio Damascus, Syria	2030	
13605	Radio Australia	1600	
13610	Deutsche Welle, Germany	2000	GG
13625	KHBI, Saipan	2200	
13610	R. For Peace Int'l, Costa Rica	0230	
13660	BBC	1500	AA
13675	BRT, Belgium	0050	FF
13675	UAE Radio, UAE	0330	
13720	Adventist World Radio, Guam	1000	RR
13760	Radio Pyongyang, N. Korea	0000	
13855	INBS, Iceland	1915	Icelandic
14917v	Radio Kiribati	0555	sign on
15010	Voice of Vietnam	2030	
15020	All India Radio	1300	unid lang
15030	R. For Peace Int'l, Costa Rica	2230	
15090	Vatican Radio	1545	
15095	FEBC, Philippines	0430	CC
15105	Deutsche Welle, Germany	1000	GG, via Antigua
15120	All India Radio	0100	
15140	Radio Nacional, Chile	0100	SS
15140	Radio Veritas Asia, Philippines	1515	Tagalog
15155	HCJB, Ecuador	0245	
15170	Radio Korea, S. Korea	0600	
15170	Radio Tahiti	0600	FF/TT
15200	Radio France Int'l	2200	PP
15250	Radio Portugal	2100	
15265	All India Radio	2200	
15280	Radio Bangladesh	1230	
15315	Voice of UAE, UAE	2000	AA
15330	Radio Sofia, Bulgaria	2300	
15335	All India Radio	1330	
15345	RAE, Argentina	0000	SS
15350	Radio Luxembourg	0300	
15360	Radio Norway	0000	NN
15375	Spanish National Radio	1930	
15400	BBC	1700	via Ascension
15425	Radio Portugal	1600	
15440	Radio Afghanistan	1900	via USSR
15445	Radio Beijing, China	0400	SS via Brazil
15450	RTT Tunisia	1700	AA
15470	Radio Tashkent, Uzbekistan	1330	
15485	Voice of Turkey	0500	TT
15525	Swiss Radio Int'l	2100	
15560	Radio Netherlands	0030	SSB
15575	Radio Korea, S. Korea	0045	KK
15600	Radio Baghdad, Iraq	1430	AA
15640	Kol Israel	0100	
15647	Radio Bangladesh	1230	
17525	Voice of Greece	1230	Greek
17525	Kol Israel	1200	Hebrew
17555	WSHB, S. Carolina	2230	
17555	Radio Pakistan	1530	
17595	RTM Morocco	1530	
17705	Radio Havana Cuba	2000	
17720	Radio Vilnius, Lithuania	2300	
17725	Voice of the Great Homeland, Libya	1700	AA
17745	Radio Algiers, Algeria	1900	FF
17745	Radio Romanian Int'l	0530	sign on
17770	Radio New Zealand	0430	
17795	Radio Australia	0100	
17810	FEBA, Seychelles	0430	
17825	Qatar Broadcasting System	1600	sign on, AA
17855	Voice of the UAE, UAE	1900	AA
21465	Deutsche Welle, Germany	0400	GG
21490	Radio Austria Int'l	0830	
21500	Radio Sweden	1530	
21505	BSKSA, Saudi Arabia	1200	AA
21510	Radio Free Afghanistan	1300	Pashtu, via RFE/RL
21570	Spanish National Radio	1700	SS
21600	Radio Yugoslavia	1200	
21605	UAE Radio, UAE	1630	
21645	Radio France Int'l	0030	
21715	Radio Yugoslavia	1300	
21730	Radio Pakistan	0230	
21750	Radio Beijing	1600	AA
21770	Radio For Peace Int'l, Costa Rica	1400	
21850	RAI, Italy	1230	Italian
25740	Deutsche Welle, Germany	1200	GG
25950	HCJB, Ecuador	1700	

■

tions don't verify reports and there are some details about them (such as their exact location and transmitter power) which are still subject to dispute.

One station is RWM, listed as being near Moscow. (However, its signals were not local-like on my portable receiver when I visited Moscow back in 1986.) RWM operates on 4996, 9996 and 14996 kHz, and gives the time and station identification in Morse code. Try for the identifications near the hour and half hour. A second station is RID, supposedly located at Irkutsk in the Soviet Far East just north of the border with Mongolia. It has a format similar to RWM and can be heard on 5004, 1004 and 15004 kHz.

Neither of these stations currently verify, but if *glasnost* continues, who knows? A report to The State Committee of Standards of the Council of Ministers of the USSR, 9 Leniniski Propeskt, 117049 Moscow, USSR, might bring a reply.

Other Targets

With WWV and CHU droning on around the clock, it's easy to fall into the habit of thinking that all time and frequency stations operate continuously. T'ain't so! For example, Chile's CBV on 4298 and 8677 kHz operates for just *five minutes* beginning at 1155, 1555, 1955 and 0055! Brazil's PPR does the same thing starting at 0125, 1425 and 2125 on such freuqencies as 4244, 8634, 12687, 16984 and 22352 kHz. Time and frequency stations are also located in such countries as India, Hong Kong, Indonesia, Spain, Italy, Peru and Sri Lanka. All can be heard in North America, although it takes a lot of effort and some luck to pull most of them in. Standard reference works like *Passport to World Band Radio* and *The World Radio Television Handbook* will give you full information on where and when to hear these stations.

Time Station = DX Beacon

Obviously, time and frequency stations are useful for setting your clock and checking the calibration of your receiver. And they can add some nice QSL's to your collection. But I find myself using them mainly as propagation beacons. For example, if I'm planning a late night DX session with Asia as a target, I listen to how soon JJY on 8000 kHz fades in and how strong its signals are. If JJY fades in early and builds rapidly to a strong level, then I know that conditions are likely to be good for DX'ing Chinese or Indonesian regional stations. But if JJY is crummy, then my best catch from Asia that morning will probably be a rerun of *Godzilla Versus Megalon* on one of the local UHF-TV stations. The same thing applies to early in the morning a couple of hours before sunrise. IF HD210A is coming through well on 3810 kHz, conditions are ripe for some juicy South American DX on 90 meters (3200 to 3400 kHz). But if HD210A isn't doing so hot, it's back to bed for some more sleep! ■

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THE HAM COLUMN

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GETTING STARTED AS A RADIO AMATEUR

Your Amateur Radio Library

With Amateur Radio's noticeable swelling of the ranks (thanks to the codeless Technician license, no doubt), there are more and more beginning hams these days. Beginning hams generate lots of questions—and I've been getting quite a few!

To point ham radio newcomers in the right direction, this month's colomn briefly examines Amateur Radio publications.

Two things hams can never have enough of are antennas and reference books. Aside from budgetary considerations, your housing arrangements may restrict the former, but only your shelf space restricts the latter—and there are plenty of worthwhile publications available to fill any size bookcase.

Amateur Radio books roughly fall into four main categories: study manuals, reference guides, operating manuals and "just-for-fun" reading. Let's look at a few of the books that are available in each category.

Study Manuals

If you're interested in becoming a ham, a good training book is a must. The most comprehensive license manuals are published by the American Radio Relay League.

Beginners should acquire *Now You're Talking!: Discover the World of Ham Radio*. It's a fun-to-read text that teaches you everything you need to know to pass the written tests to earn a Novice or Technician license. *NYT* includes the complete question pools for both licenses. It's without a doubt the best beginner's Amateur Radio book and it will answer many of your questions.

If you're already a ham, you may wish to upgrade to a higher-class license. The ARRL also publishes study manuals for General Advanced and Extra Class test Elements.

One book no ham should be without (and one that goes well with any license manual) is the *The FCC Rule Book*. The *Rule Book* contains a complete listing of the FCC's rules governing Amateur Radio in the US—and their plain-language interpretation.

Reference Guides

Books that contain data, construction projects, tables, charts and special lists are handy to have around your radio room. The *Callbook*, for example, lists almost every Amateur Radio operator in North America (a companion edition lists hams from the rest of the world) and is useful in identifying other hams and getting their mailing addresses for exchanging QSL cards. It also lists the standard call sign prefixes assigned to each country by the International Telecommunication Union (ITU).

The *ARRL Repeater Directory* lists almost 20,000 digital, voice, amateur television and other repeater stations in the US and Canada. It's a pocket-sized resource that's invaluable for travelers who use the bands above 29 MHz.

If you're a radio amateur interested in serving the public by relaying messages via the National Traffic System, you'll find the *ARRL Net Directory* a ready guide to the nets that meet in your area.

Your Guide to Packet Radio is a beginner-to-expert volume that describes what packet radio is, how it works, how it was developed, equipment used and operating techniques for this exciting computer-to-computer radio mode.

The *ARRL Handbook*, now in its 68th Edition, is one of the largest-selling books in history (nearly 6 million copies have been sold since 1928), and Amateur Radio operators fondly call it "the ham bible." It contains training and simple tutorial information on radio technology from its invention to the latest state-of-the-art devices, explains how ham equipment and circuits work, teaches beginning through advanced electronics theory and is chock-full of fascinating projects.

Next in line when it comes to popularity is *The ARRL Antenna Book*. In addition, to featuring hundreds of antenna construction projects and design data, the *Antenna Book* is a comprehensive reference on the theory of antennas, transmission lines, SWR and other related topics.

Operating Manuals

The *ARRL Manual* is the ultimate on-the-air companion. Entire chapters cover licensing, US and international radio regulations, practical on-air techniques for voice, Morse code and other modes, HF and VHF operating, contesting, FM and repeaters, awards, local and DX communications, public service traffic handling, packet, satellites, radioteletype and AMTOR, amateur television and fax transmission, mobile and portable stations, DXpeditions and more. There are maps, tables, charts and lists of almost anything you'll need to know to get the most out of your hamming activities.

Operating an Amateur Radio Station helps beginners set up their stations and explains (in simple terms) how to get on the air.

Fun Reading

Although most hams think it's fun to read almost any book about Amateur Radio, there are some books that contain no reference material, training instruction or information listings—but are still fun to read!

The *Gil Cartoon Book* is packed with hilarious, timeless panels that were a trademark of *QST* magazine in the 1930's-60s, as penned by the late Phil Gildersleeve, W1CJD.

For fans of the early days of ham radio, *Fifty Years of ARRL* is an exhaustive history of the League and its Members' achievements from 1914 to 1964.

200 Meters and Down, written by Clinton DeSoto, W1CBD, chronicles the early years of radio, the founding of the ARRL and makes interesting observations and predictions about the future of ham radio as seen from the author's perspective in the 1930's.

There are also ham radio-related adventures by authors such as Cynthia Wall, KA7ITT, and the late Walker Tompkins, K6ATX, in the fiction books *Night Signals, Hostage in the Woods, Murder by QRM, SOS at Midnight, Grand Canyon QSO, CQ Ghost Ship*, and *Death Valley QTH*. These stories are just the thing to give you a dose of amateur excitement when the bands are closed or your radio is in the shop.

Your Library

There are, of course, many more books of interest to hams, and new ones come out all the time. Advertisements in magazines like *Popular Communications, CQ, QST* and *73* will keep you informed about what's available. Your local ham radio store or dealers at hamfest and flea markets probably carry several interesting titles.

If you're like most hams, you'll eventually find yourself accumulating a well-stocked bookshelf. Aside from a transceiver, antenna and licensed operator, no ham station is complete without a ham radio library!

Most of the books mentioned in this column are available from the ARRL. If you send me an SASE, I'll send you "The ARRL Bookshelf," a handy listing of all ARRL publications.

As usual, send your letters, questions and photos to me at ARRL, Department PCN, 225 Main Street, Newington, CT 06111. See you in the library—the ham radio library!

SATELLITE VIEW

BY DONALD E. DICKERSON, N9CUE

INSIDE THE WORLD OF SATELLITE COMMUNICATIONS

Mail Call

Well, it is your turn to have a say, so let's get started. Our first letter is from Benoit Sylvestre, VE2VB, of Quebec, Canada. Benoit asks if there is a publication that lists all audio sub-carriers and SCPC (Single Channel Per Carrier), audio services. To date, there is no publication which lists SCPC programming. The reason, in part, is due to the fact that the location of the programs (frequency) and location on the transponder changes often. While the Audio Sub-Carriers also change from time to time, most of your Satellite TV Guides, which can be found at your local book store or newsstand, list most of them. In your letter you mentioned the foreign broadcasts you could find on audio sub-carriers. These same guides also list them and the list continues to grow as more and more international radio broadcasters move to satellite operations. As you tune through the SCPC transponders you will find many data channels. Some are digital, encrypted or more standard formats.

Our next letter is from Mr. M. D. Ruttley of London, England. Mr. Ruttley is interested in the Heil Sound SC-1. This is a commercial quality SCPC receiver at consumer prices. The SC-1 is designed to work with the varying bandwidths of various SCPC signals. You can write Heil Sound directly, Mr. Ruttley, at the following address: Heil Sound, #2 Heil Drive, Marissa, Illinois USA 62257, or call (618) 205-3000.

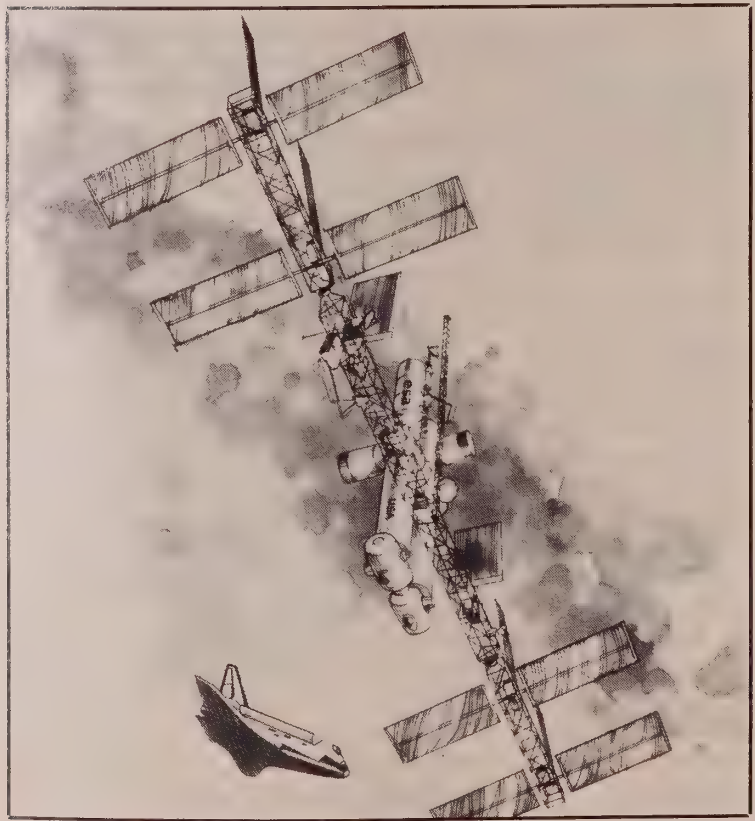
As Mr. Sylvestre's and Mr. Ruttley's requests for SCPC information are common ones and SCPC information is so scarce, I suggest we start a logging section. As you, the readers of Satellite View, send in your loggings of SCPC programs we will print the information for the benefit of other readers.

David Rickmers of Houston, Texas sends us some technical information on SCPC transmissions. Dave reports that SCPC channels can be 15, 7.5 or 5 kHz wide. This means audio quality may be less than perfect unless your receiver has a selectable IF. Many SCPC's are compandered. This is a method of electronically compressing a wide signal into a narrow one. This is done at the transmitter. The receiver then widens the signal for detection (usually a 3 to 1 compression on transmission and a 1 to 3 expansion on receive). This is done to conserve frequency space which allows more programs to be put on one transponder.

Mr. Aldo Cicuto of Montreal, Canada wants to know where he can get a PacComm PSK-1 modem which was mentioned in the April issue. This modem is used for Packet satellite reception. You can write PacComm for more information. Their address is as follows: PacComm Packet Radio Systems, Inc., 3652 W. Cypress St., Tampa, FL 33607-4916. You can call them at 1-800-232-3511 or telefax at (813) 872-8696. Tell them PopComm sent you. For readers in the U.K., contact AMSAT-UK directly at the following address: AMSAT-UK, R.J.C., Broadbent, 94 Herongate Rd., Wanstead Park, London E12-5EQ.

Next we hear from Dennis Eksten, W9SS, of Loves Park, Illinois. Dennis wants to know where to get TVRO equipment and what brands I would recommend. If you are looking for new equipment, the "big three" of satellite receivers are Drake, General Instrument and Uniden. I would be hard pressed, however, to recommend any particular brand. Anything I might say would be too subjective to be of any help to you. The best thing you can do would be to continue your search for information by looking at the catalogs, talking to dealers and friends in the hobby.

If you do not want to invest in new equipment, you can begin your search for used gear. A good place to start looking is your local, independently owned electronics shop. Like the independently owned gas station, these few remaining dinosaurs are destined for extinction as the One Worlders, the ar-



An artist's rendering of the Space Station's manned base.

An artist's rendering of the Space Shuttle Orbiter firing retrorockets to slow and position the orbiter.

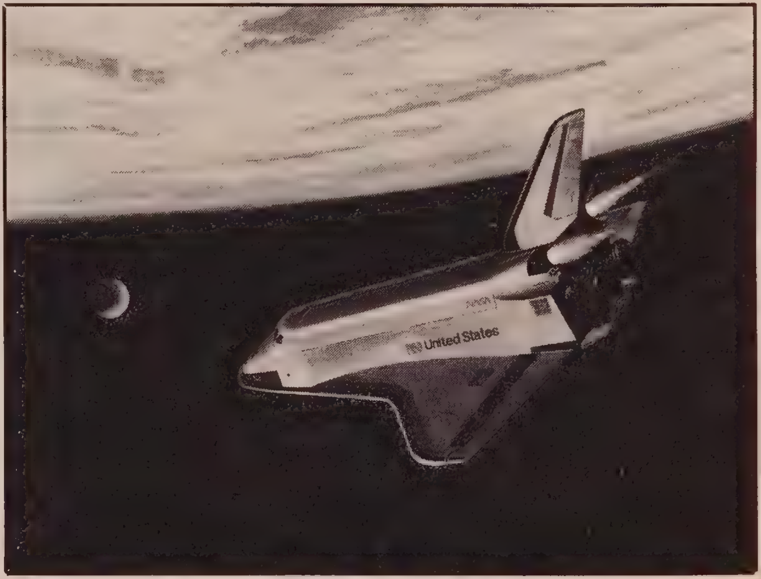


Table 1
WESTAR V 122° W

TRS/POL	FREQUENCY	MODE	USER	SUBCARRIER
1 H	3720 MHz	Inactive		
2 V	3740 MHz	TV/FM	University Network	2 SC
3 H	3760 MHz	Inactive		
4 V	3780 MHz	Inactive		
5 H	3800 MHz	Inactive		
6 V	3820 MHz	FDMA (digital) (2 channels 12 MHz wide)		
7 H	3840 MHz	TV/FM	CBS	
8 V	3860 MHz	Inactive		
9 H	3880 MHz	13 SCPC Channels		
10 V	3900 MHz	Digital (36 MHz wide)		
11 H	3920 MHz	Inactive		
12 V	3940 MHz	22 SCPC Channels		
13 H	3960 MHz	FDM/FM		
14 V	3980 MHz	Digital	CBS	
15 H	4000 MHz	TV/FM		2SC
16 V	4020 MHz	6 SCPC Channels		
17 H	4040 MHz	TV/FM Encoded		6.8 MHz
18 V	4060 MHz	TV/FM		9 SC
19 H	4080 MHz	Digital		
20 V	4100 MHz	Inactive		
21 H	4120 MHz	Inactive		
22 V	4140 MHz	Inactive		
23 H	4160 MHz	TV/FM		6.8 MHz
24 H	4180 MHz	TV/FM		2 SC

Note: SCPC = Single Carrier Per Channel.
SC = Sub-carrier (audio).

chitects of the New World Order, which will force us deeper into Monopoly Capitalism. You can, however, still find them, especially in the western half of the country. For example, in my area one shop sells older analog and reconditioned Satellite receivers at very low prices. You should also look for used gear at Hamfests. In addition, keep an eye on your local community papers for leads.

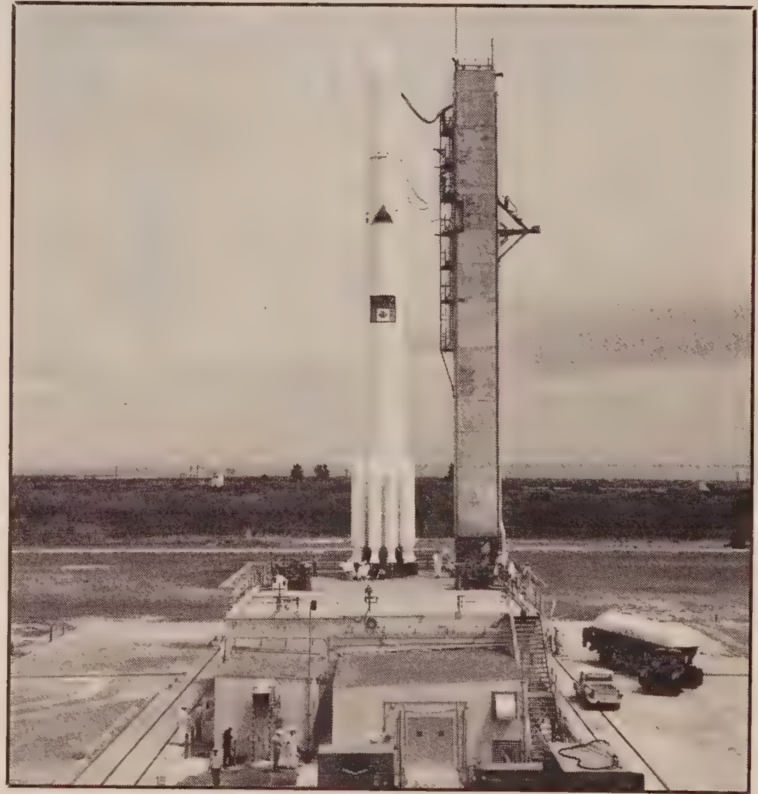
Dennis also wanted to know what books and magazines I would recommend. I can give you the names of three books on TVRO I have found to be helpful. For the beginner (or old salt for that matter) the *Satellite Television Sourcebook '91* by Ken Reitz is hard to beat. It gives you tips on installation, what you can hear, etc. *The Hidden Signals On Satellite TV* by Thomas P. Harrington is a must. When it comes to magazines, check your local book store or newsstands.

Charles Rush of Macedonia, Ohio has recently become interested in satellite communications. Charles wants more information on NASA communications and wants to know if the ARRL's *Satellite Experimenters Handbook* is a good place to start learning about satellite basics. Well, Charles, the ARRL publication is an excellent reference and a good course in the basics. The League also publishes the *Satellite Anthology* which is a good primer on Amateur satellites. NASA select TV is available on Satcom F-2R, Transponder 13, located at 72°W, freq: 3960.0 MHz audio sub-carrier at 6.8 MHz. A voice recording of the TV schedule can be yours by dialing (202) 755-1788. NASA provides this same information in a data service for your computer. A standard modem is required. You can reach COMSTOR by dialing (713) 483-5817. I have included some NASA support frequencies you can listen to just prior to, during and just after a Shuttle launch. Don't forget that Goddard Space Flight Center radio club re-transmits Shuttle audio "live" on several frequencies in the Ham bands. I have included these fre-

Table 2
ASC-1 128° W

TRS/POL	FREQUENCY	MODE
1 H	3720 MHz	TDMA (10 MHz wide)
2 H	3760 MHz	20 SCPC Channels
3 H	3800 MHz	21 SCPC Channels
4 H	3840 MHz	45 SCPC Channels
5 H	3880 MHz	35 SCPC Channels
6 H	3920 MHz	TDMA (digital)
7 V	3740 MHz	27 SCPC Channels
8 V	3780 MHz	TDMA (digital)
9 V	3820 MHz	TDMA (36 MHz wide) (digital)
10 V	3860 MHz	TDMA (digital)
11 V	3900 MHz	23 SCPC Channels
12 V	3940 MHz	TDMA (36 MHz wide) (digital)
13 H	3980 MHz	24 SCPC Channels
14 H	4060 MHz	34 SCPC Channels
15 H	4140 MHz	48 SCPC Channels
16 V	4000 MHz	39 SCPC Channels
17 V	4080 MHz	49 SCPC Channels
18 V	4160 MHz	19 SCPC Channels
19 H	11740 MHz	18 SCPC Channels (Ku-band)
20 V	11820 MHz	23 SCPC Channels
21 H	11900 MHz	32 SCPC Channels
22 H	11980 MHz	19 SCPC Channels
23 H	12060 MHz	TV/FM
24 H	12140 MHz	28 SCPC Channels

Note: SCPC = Single Carrier Per Channel.
SC = Sub-carrier (audio).



The Telesat-B, Canada's Communications Satellite. Launched in 1973, the satellite acts like a space repeater capable of receiving transmissions from Earth stations and retransmitting them to other Earth stations in Canada.

How do I get more data?
Use the free info card.

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Readers can obtain free information on products advertised, as well as for some editorially mentioned products. Simply circle the appropriate number printed below an advertisement onto the **PC** "Free Information Service" card bound into this issue. After filling in your name and address, just mail the postpaid card. Your request will be forwarded directly to the advertiser with a mailing label prepared by our reader-service department.

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City_______________State_______Zip_______

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Charge My Order To: **Payment Enclosed $_________**

MasterCard ☐
VISA ☐

My account number is:

quencies for you, Charles.

Mr. Rod Souza of Hawaii, wants to know where he can find the news feeds for the major networks on the satellites. I have collected the information you want, Rod. You will find it in the accompanying charts.

Next we hear from Thom in Philly. He wants to know what mode of operation he can find on 145.825 MHz. This frequency is used by Amateur Radio satellites. The UK has two satellites known as UoSats on this frequency. The UoSat uses a special format known as Manchester and it takes a special mode to receive it. Dove, an amateur satellite from Brazil, also uses this frequency for both FM voice (when the synthesizer is working) and for satellite Packet. This mode requires an additional modem as satellite packet is Phase Shift Keying (not FSK). The packet format is an AX.25, 1200 bps. You may also hear, CW telemetry from the new Russian satellite RS-14. It uses a frequency of 145.822 MHz.

NASA News

The redesigned mock-up of the space station Freedom was on exhibit at the 39th Paris Air Show. The first Shuttle launch carrying station elements is scheduled for 1996. It will not be permanently manned until 2001. Seventeen Shuttle flights will be required to complete the station.

The US and Canada have signed an agreement to let the US use the imagery of Canada's newest Radarsat, Earth Observation Satellite. Its Synthetic Aperture Radar (SAR) can see through clouds. NASA will be providing the launch vehicle for Radarsat.

That is it for this time around. Be sure to send your loggings, photos, comments, questions and suggestions. See you next month. ■

More information on the publications mentioned this month can be obtained by writing the following addresses:

Baylin Publications
1905 Mariposa
Boulder, CO 80302

American Radio Relay League
225 Main St.
Newington, CT 06111

AMSAT-UK
R.C.J. Broadbent
94 Herongate Rd.
Wanstead Park
London E12-5EQ
081-989-6741
081-989-3430

Xenolith Press
R-5 Box 156A
Louisa, VA 23093

PacComm Packet Radio Systems, Inc
3652 W. Cypress St.
Tampa, FL 33607-4916

CRB Research Books, Inc
PO Box 56
Commack, NY 11725

SCANNING VHF/UHF

BY CHUCK GYSI, N2DUP

MONITORING THE 30 TO 900 MHz "ACTION" BANDS

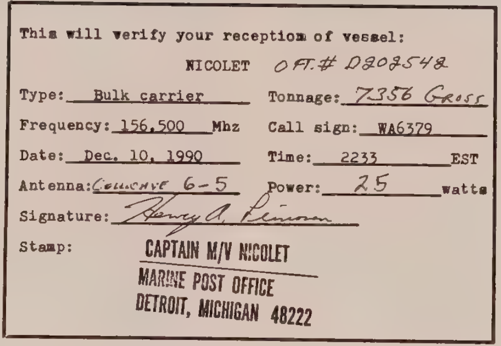
The fall's a good time to get ready for wintertime scanning. That means it's time to check your antennas, cable and connections that are subjected to harsh, cold weather. You certainly don't want to miss storm scanning action because your coax is flapping around in the wind.

From Detroit, Michigan, checks in George M. Kupraszewicz, who notes that for persons living in big cities, usually the telescoping or rubber duckie antenna is quite sufficient. He adds that there's a major difference between having an outside antenna and using the supplied antennas, however, it should be noted that repeaters are used for fire and police departments in most big cities, thus extending the reception range of mobile and handheld units. Thus, unless you want to snare long-distance signals far from your city, the telescoping or rubber duck antennas will hear most signals in your city with no difficulty.

George also passes along some frequencies for the Motor City: Detroit Department of Transportation - 44.54 (service trucks), 452.375 (supervisors), 452.425, 452.475 and 452.775; news media - 151.775, WXYZ; 166.250, WJBK; 450.0875, WDIV; 450.150, WJBK; airport - 120.750, ATIS (airport weather and information; 121.300, airport tower; Grand Trunk Western Railroad - 160.260, 160.470, 160.590, 160.800, 160.845 and 160.950.

John Schaffner of Sidney, Ohio, passes along a very interesting story. Earlier this year, John said that he and his brother drove by the local sheriff's office and noticed a few detectives' cars parked there. The brothers then parked across the street and started searching VHF high band with an old Realistic Patrolman 50 tunable receiver. They stumbled across a wireless microphone around 154 MHz and they could easily hear sheriff's detectives talking with criminal investigators about making a drug buy. John's brother drove to a friend's house to pick up a Realistic PRO 34 handheld scanner and found the wireless mic was set up on the police frequency of 154.830 MHz. The brothers heard where the detectives were going to set up the drug buy and drove there to get into position to monitor the bust.

The wireless mic that John was listening to was so sensitive that the criminal investigator's footsteps could be heard over the radio. After buying an ounce of marijuana at the drug dealer's home, an investigator went back to the detectives' van. The cops then came in and the dealer was arrested. The brothers monitored the bust from 500 feet away and were able to hear all the action clearly. It just goes to show it doesn't hurt to tune around. You never know what you'll stumble across!



This will verify your reception of vessel:

NICOLET O.FT.# D202548

Type: Bulk carrier Tonnage: 7356 Gross

Frequency: 156.500 Mhz Call sign: WA6379

Date: Dec. 10, 1990 Time: 2233 EST

Antenna: Cellwave 6-5 Power: 25 watts

Signature: Henry A. [illegible]

Stamp: CAPTAIN M/V NICOLET
MARINE POST OFFICE
DETROIT, MICHIGAN 48222

Here's the QSL that Russ Hill prepared for a ship captain to fill out and return to verify his reception on the VHF marine band.

John passes along some other frequencies for his area: Sidney police, 159.210 and 154.710; Shelby County sheriff, 154.755.

Floyd B. Jacobsen of Sheridan, California, says he's interested in getting started in scanning, however, he's partial to finding a scanner made in the United States or Canada. Unfortunately, most of the scanners made these days are put together in Japan or Korea, and to my knowledge, nothing is made in the United States. Floyd goes on to ask whether he could build a scanner from scratch if a U.S. made radio was not available. While I've seen plenty of kit projects for tunable VHF receivers, I've never seen anything similar for scanners. If you want to scan, you're stuck buying the overseas-made units.

Benjamin Lynch of San Francisco, California, has some interesting observations of scanning in disaster situations after his handheld scanner took a dive during the Bay Area's massive earthquake. He said that after falling to the floor squarely on the BNC mount, the connector was pushed into the case. This rendered the connector useless as an external antenna connection point, however, he said he was lucky that the wiring remained intact. The scanner's memory didn't fare as well, however, as he was forced to reprogram the 200 channels in the light of a flashlight as aftershocks rumbled and plaster fell around him.

Benjamin believes it's time for handheld scanner users to tell manufacturers what's needed in their products. He notes that the antenna connector is highly susceptible to damage, as he very well found out. He also takes issue that earphone and DC power jacks should be standardized and wishes LED lighting actually lit the display so that it can be read and programmed. Lastly, Benjamin wishes belt clips were designed for rigors of real use. He says he's added Motorola belt clips to all his scanners so that they work better. Benjamin is interested in what other handheld users would offer to the manufacturers for design changes. What would you like? We'll publish your ideas.

Bob Tronconi of the Bronx, New York, writes in asking whether we have the in-studio frequencies used for anchorperson microphones for WYNY-TV Channel 5 in New York City. Actually, you'd need a scanner that is capable of out-of-band reception to stumble across these. While some stations actually might utilize 450 or 455 MHz frequencies on a low-power basis, you're probably more likely to find activity for in-studio use in the 174-216 MHz band, which consists of the frequencies used by TV channels 7-13. Some new versions of these studio mics are being advertised for UHF, however, the majority seem to be used on the 174-216 MHz band.

Russ Hill writes from Oak Park, Michigan, saying that he likes monitoring the VHF marine channels, especially the bulk carriers and tankers on the Great Lakes. Some Detroit River frequencies of note from Russ include: 156.500, used to contact the mail boat J.W. Westcott II; and 156.600, used to contact Sarnia Traffic Control Center to report position. Russ reports that he's successful getting back prepared QSL cards from the sailing vessels by addressing his requests to the ship in care of Marine Post Office, Detroit, MI 48222.

Wes Linscott, NI1Y, of Bangor, Maine, says he's a new *POP'COMM* reader and enjoys this column. He's been involved with communications for more than 25 years and has been a ham since 1967. He was a former radioman first class in the Navy and currently is employed as dispatcher for the Maine State Police in Orono. He monitors at home with a Bearcat 210XLT and a 2-meter Ringo Ranger antenna at 40 feet. He also has an old Bearcat BCH-1 eight-channel crystal scanner for listening to local 2-meter repeaters and a 10-channel Regency programmable scanner in the car to keep up to date while mobile.

Wes says most public safety communications in Maine are on VHF high band. He passes along some frequencies of interest for visitors in the Acadia and Bar Harbor areas: Acadia National Park, 164.175; Bar Harbor police, 159.150; Mount Desert police, 154.980; Ellsworth police, 156.210; Hancock County sheriff, 155.520; Region 4 police net, 155.055; Maine State Police repeater, 154.905; Maine State Police car to car, 154.935; statewide car to car, 154.695, ambulances to hospitals, 155.355. Wes notes he can be heard on the state police and regional frequencies, as well as the 146.540 and 146.940 ham repeaters in the Bangor area.

What are you hearing on the scanner in your area? How about a photo of that recently cleaned-up listening post? ■

BY DON SCHIMMEL

COMMUNICATIONS CONFIDENTIAL

YOUR GUIDE TO SHORTWAVE "UTILITY" STATIONS

Peter Rouse is the writer of a monthly column called "SSB Utility Listening" which appears in the British "Short Wave Magazine."

Simon Mason, England sent in a copy of Rouse's May 91 column and here is a portion I believe will be of interest to *POP' COMM* readers.

Numbers Stations - Spies Or Lies. "Some readers (including the 'Laughing Cavalier' from London) have asked about the so-called 'numbers stations' that are claimed to be sending coded messages to spies. This is certainly a common belief amongst the national media and hobbyist magazines in America. The claim is that these spoken messages, which consist of nothing more than two, three, four or five digit number strings, are spy transmissions that are easily received on simple, portable h.f. receivers which can be bought anywhere.

"I have to say from the outset that I have always been skeptical about these claims. Now anyone with even a simple receiver has probably heard these transmissions. In the UK, the most powerful have been those with the lady announcing the numbers in German. These transmissions have been attributed to East Germany and my skepticism has increased because even though Germany is no longer split the transmissions can still be heard -this surely makes the idea of a connection with spying nonsense. However, just because the announcer speaks in German there's nothing to stop the transmissions coming from, say, Russia. Perhaps, the mystery has just deepened.

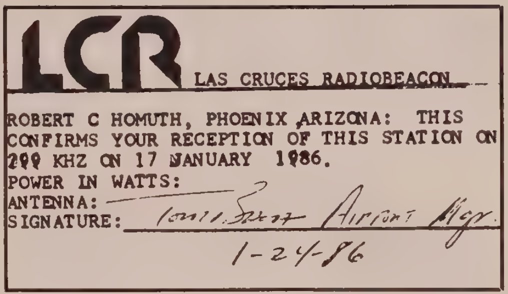
"One other curious aspect of these transmissions is that no matter what language they are in (some voices are distinctly American) they all seem to operate at around the same frequencies. Try tuning 5.015, 6.840, 7.404 and 7.415 MHz particularly at night. Languages you are likely to hear are German, Russian, English and Spanish. Claims have been made in some American magazines that these transmissions are from the American CIA, Russian KGB, Israeli Mossad and Cuban DGI intelligence agencies. The stations that signs Papa November on 7.404 MHz is very easy to hear and usually repeats its callsign four times before transmitting a series of musical tones and then the numbers. You are likely to hear a variety of modes used; a.m., s.s.b., and c.w."

Our thanks to Simon for forwarding this interesting rundown from across the pond. But what purpose does Peter Rouse suspect, if he is skeptical of the espionage purpose most others imagine?

First time contributor, Ed Pierce, MD sent in a batch of loggings which he copied with his Kenwood R-5000 and a 25′ wire antenna. Welcome to the column, Ed.

Perry Crabille, VA and Philipp Galasso, NJ both wrote in to explain that the 4436 kHz item which appeared in the May column was an image signal of 3526 kHz and the SS seen in the callup of "CQ SS DE WJIU" stands for a "Sweepstakes" contest sponsored by the ARRL.

A QSL address has been received from Andy Gordon, CT for two US Army vessels - CW3 Harold C. Clinger LSV2, and Major General Charles P. Gross LSV5: Commanding Officer, 5th Transportation Company, Ford Island, Hawaii 96701.



LAS CRUCES RADIOBEACON

ROBERT C HOMUTH, PHOENIX ARIZONA: THIS CONFIRMS YOUR RECEPTION OF THIS STATION ON 200 KHZ ON 17 JANUARY 1986.

POWER IN WATTS:

ANTENNA:

SIGNATURE: Airport Mgr.

1-24-86

Robert C. Homuth, AZ shares his PFC with us.

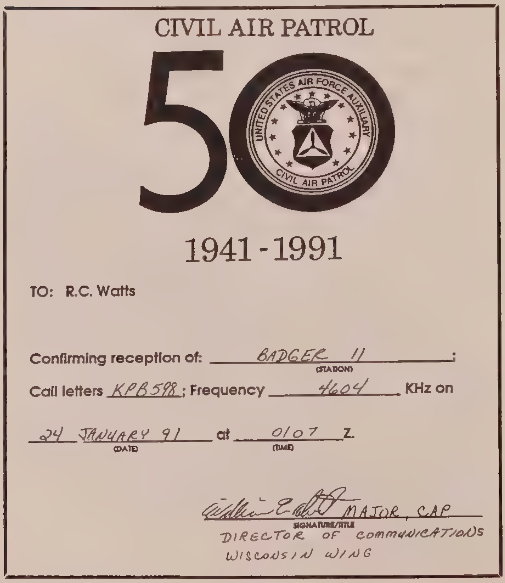
An anonymous contributor in Saudi Arabia wrote: "Now that the war is over I can report on some military HF frequencies I heard. There were 4 types of enciphered voice I found. The first and most common came up with about a 100 baud burst then into the enciphered voice and it went down with a short burst. The frequencies were: 2711.5, 3232, 3251, 34404, 3813, 4534, 5960, 6804, 7640, 7663, 8019, 8068, 9009 and 9255.6 kHz.

"The second had about a 100 baud printer sent continuously with the enciphered voice part. This was found on frequencies of 4125, 5570, 8371, 9404 kHz.

"The second had about a 100 baud printer sent continuously with the enciphered voice part. This was found on frequencies of 4125, 5570, 8371, 8847 and 9404 kHz.

"The third was noted as being just the enciphered voice. No printers. When I found frequency 10190 kHz I heard a phone dialing and when they started talking it was enciphered voice. This was heard on 8075, 8333 and 10190 kHz.

"The fourth was the weirdest one. It had


CIVIL AIR PATROL
50
UNITED STATES AIR FORCE AUXILIARY
CIVIL AIR PATROL

1941 - 1991

TO: R.C. Watts

Confirming reception of: BADGER 11 (STATION);

Call letters KPB598; Frequency 4604 KHz on

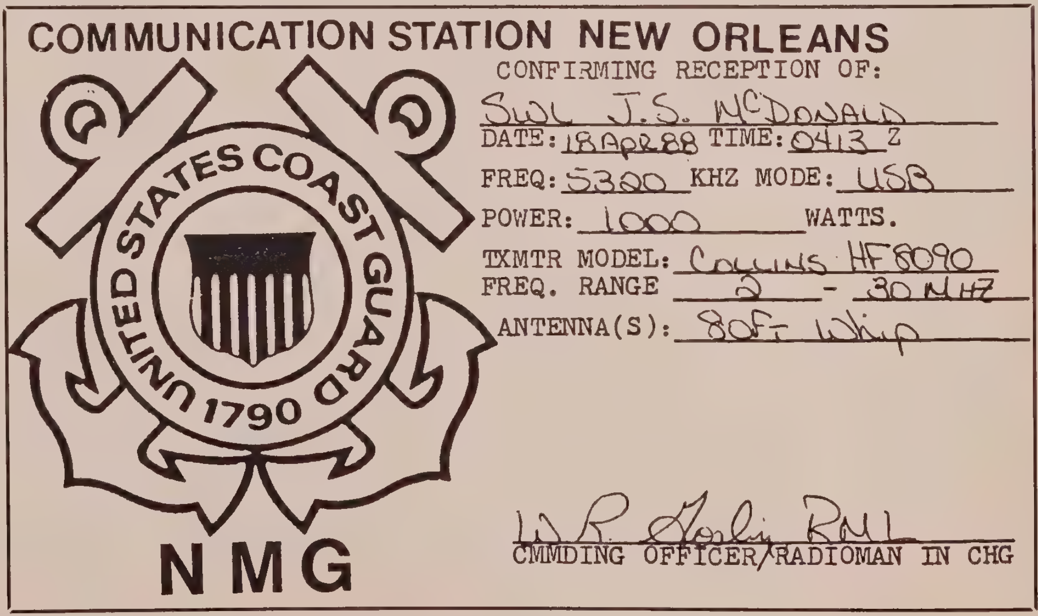
24 JANUARY 91 (DATE) at 0107 (TIME) Z.

MAJOR, CAP (SIGNATURE/TITLE)

DIRECTOR OF COMMUNICATIONS

WISCONSIN WING

50th Anniversary QSL card received by R.C. Watts, KY.


UNITED STATES COAST GUARD
1790
N M G

COMMUNICATION STATION NEW ORLEANS

CONFIRMING RECEPTION OF:

SWL J.S. McDONALD

DATE: 18APR88 TIME: 0413 Z

FREQ: 5320 KHZ MODE: USB

POWER: 1000 WATTS.

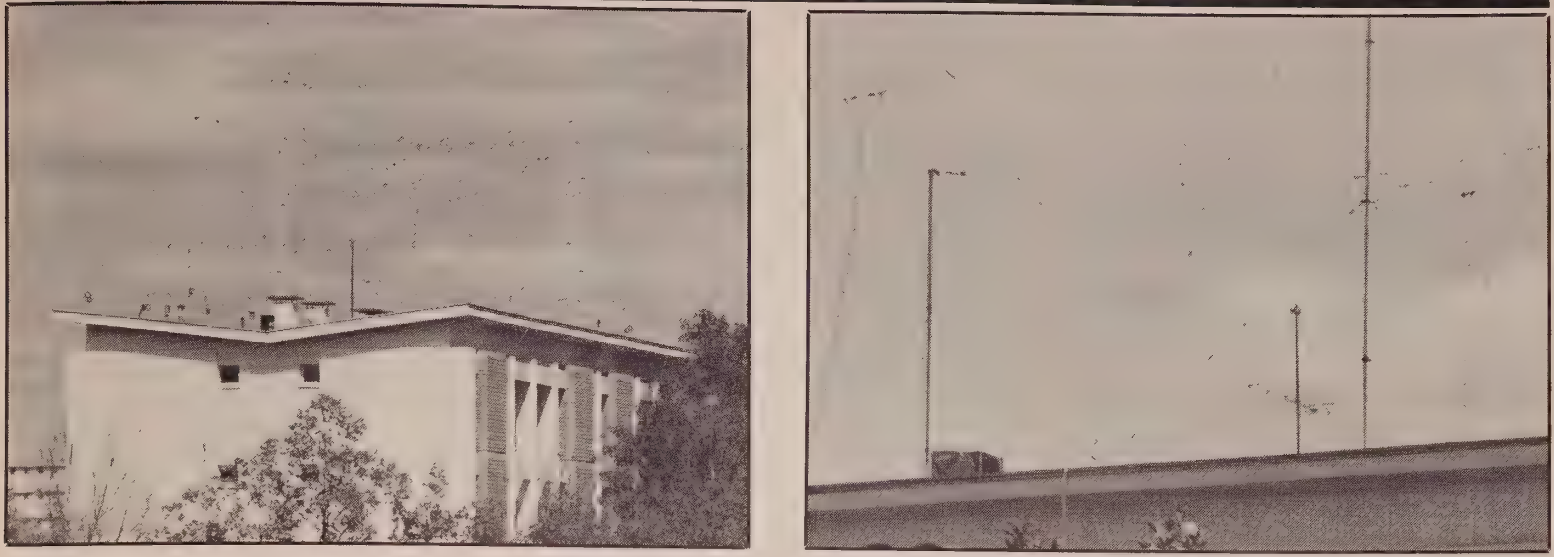
TXMTR MODEL: Collins HF8090

FREQ. RANGE 2 - 30 MHZ

ANTENNA(S): 80Ft Whip

CMMDING OFFICER/RADIOMAN IN CHG

PFC returned to Steve McDonald, BC, Canada.



Two views of antennas on roof of Soviet Embassy in Madagascar. Photos courtesy of Prof. Desmond Ball, Australia.

the enciphered voice part with what I believed were masking tones possibly keyed with the amplitude of the speech energy. Or it may have been a 10-15 baud printer. It was hard to tell just by listening to it. Frequency 7740 kHz was ISB with an FDM system in the USB and the enciphered voice in LSB. Another frequency observed was 9154 kHz."

Tom Kneitel, please ignore the foregoing information.

I have learned that the Navy Sea-Bees at Truk in the Caroline Islands are building a runway on the tiny remote island of Ulul and while there are using a temporary callsign of NNN0NQD for their MARS communications.

M. Stuart, DE sent in a rundown on the various vessels he has observed in the activities of the Atlantic Underwater Test and Evaluation Center (AUTEC) noted in the communications on 2716 kHz. AUTEC Ops or SNAPPER Base works these vessels plus sometimes Headwaiter Tango or Headwaiter Charlie will also work the units.

Torpedo Retrievers - TR825 (also called SNAPPER 825) and TR841 (also called SNAPPER 841).

Utility Craft - LCU 1611, LCU 1647 and YFU 91 (formerly LCU 1608) called "Why-a-key 91."

Research Vessels - Range Master, Range Rover, NUSC Ranger.

Submarine - WB685 (formerly USS Glenard P. Libscomb, SSN685).

Other Research Vessels operating with AUTEC units but owned by David W. Taylor Naval Ship Research & Development Center - Deer Island YAG62, MONOB YAG61, and Athena.

The Deer Island is based at Port Everglades, FL and is used by the Taylor Center for sound testing. The MONOB stands for Mobile Noise Barge. It was assigned to Port Canaveral, FL and was used for acoustic trials of Navy ships. The Athena I & II were ex-PG94 and PG98 respectively and are identified as "Specialized Support Craft."

Ute Loggings. All Times Are UTC

11.05: Omega navigational signal. Pulse of .8 sec, gap of 10.1 sec, then pulse of 1.1 sec foll by gap of 7.9 sec then pattern rpts. Hrd at 0036. (Webb, CA)

11.8: Omega navigation station C, Hawaii at 1555. Pulse of .7 sec, gap .1, pulse 1.1 sec, gap 1.3 sec, pulse .7 sec, gap .15 sec, pulse 1.1 sec, gap 4 sec then pattern rpts. (Webb, CA)

123: CKN, Vancouver, Canada in CW at 0729 w/wx report. (Vaage, CA)

203: Beacon ZKI, Terrace, BC, Canada at 1338. (Arens, BC, Canada)

218: Beacon PR, Prince Rupert, BC, Canada at 1341. (Arens, BC, Canada)

219: Beacon BA, Baltimore, MD, no time given. (Pierce, MD)

248: Beacon IL, Wilmington, DE. No time. (Pierce, MD)

285: Beacon EUD, York, PA. No time. (Pierce, MD)

305: Beacon ONO, Ontario, OR, Canada at 0955. (Arens, BC, Canada)

320: Beacon A, Point Arens LS, CA at 1555; Beacon K, Cape Kiwanda, OR at 1440. (Arens, BC, Canada)

329: Beacon CH, Charleston, SC. No time. (Pierce, MD)

337: Beacon NA, Santa Ana, CA at 2030. (Webb, CA)

338: Beacon PBT, Red Bluff, CA at 0804. (Vaage, CA); Beacon POB, Ft. Bragg, NC at 2224; Beacon VTI, Vinton, IA at 0434. (Crabill, VA)

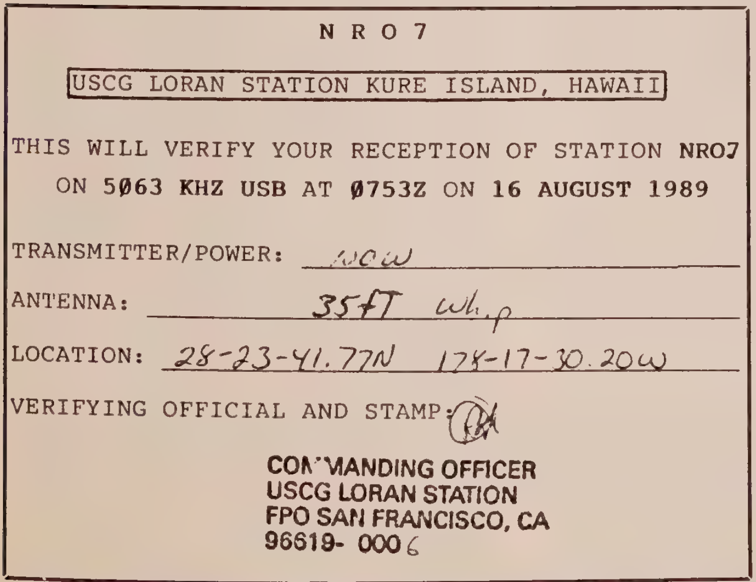
375: Beacon GZS, Pulaski, TN at 2350; Beacon RYB, Raymond, MS at 0507. (Crabill, VA)

378: Beacon OT, North Bend, OR at 1011. (Arens, BC, Canada)

383: Beacon VF, unidentified, hrd at 0836. (Vaage, CA)

388: Beacon MFV, Melfa, VA. No time. (Pierce, MD)

392: Beacon CLY, Worcester, MA at 0840; Beacon VEP, Vero Beach, FL at 0420. (Crabill, VA)



N R O 7

USCG LORAN STATION KURE ISLAND, HAWAII

THIS WILL VERIFY YOUR RECEPTION OF STATION NRO7
ON 5063 KHZ USB AT 0753Z ON 16 AUGUST 1989

TRANSMITTER/POWER: 100W

ANTENNA: 35FT whip

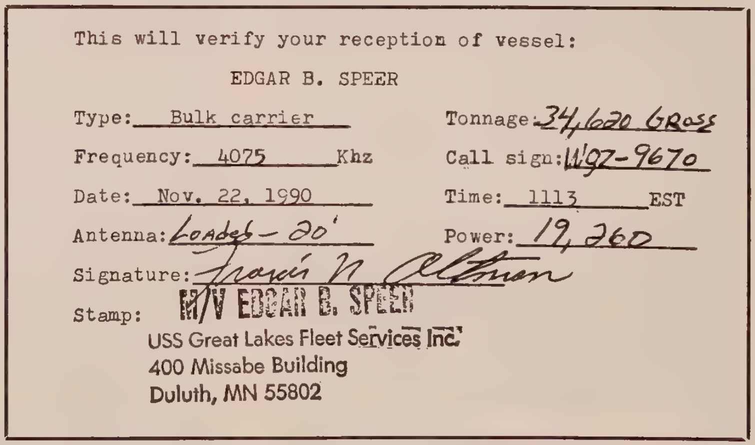
LOCATION: 28-23-41.77N 178-17-30.20W

VERIFYING OFFICIAL AND STAMP:

COMMANDING OFFICER
USCG LORAN STATION
FPO SAN FRANCISCO, CA
96619- 0006

Here is the PFC returned to Dave Sabo, CA from the Kure Island LORAN Station.

This PFC was returned to Russ Hill, MI.



This will verify your reception of vessel:

EDGAR B. SPEER

Type: Bulk carrier

Tonnage: 34,620 GROSS

Frequency: 4075 Khz

Call sign: WQZ-9670

Date: Nov. 22, 1990

Time: 1113 EST

Antenna: Loaded - 20'

Power: 19,260

Signature: Francis N Altman

Stamp: M/V EDGAR B. SPEER
USS Great Lakes Fleet Services Inc.
400 Missabe Building
Duluth, MN 55802

394: Beacon RO, Birmingham, AL at 1158; Beacon XJQ, Abbeville, AL at 0407; Beacon EZZ, Cameron, MO at 1118; Beacon MK, Jackson, TN at 1158. (Crabill, VA)

397: Beacon SB, Northon AFB, CA at 0615. (Webb, CA)

400: Beacon NHK, Patuxent River NAS, MD. No time. (Pierce, MD); Beacon AB, Allentown, PA at 1450; Beacon OHY, Cordele, GA at 0155; Beacon PTD, Potsdam, NY at 2137. (Crabill, VA)

414: Beacon CSS, Washington Court House, OH at 0218; Beacon FDW, Winnsboro, SC at 2154; Beacon LK, Louisville, KY at 0343; Beacon OGY, Rockaway, NY at 0028; Beacon SUE. Sturgeon Bay, WI at 1142. (Crabill, VA)

521: Beacon INE, Missoula, MT at 1219. (Webb, CA)

530: TIS Los Angeles County, CA at 1302. Gave ID of WNCN739. Traffic info for Burbank-Glendale-Pasadena airport. (Webb, CA)

1685: Beacon MER, Mercaderes, Colombia at 0600. (Webb, CA)

2357.5: OUA32, Stevns, Denmark in CW w/mkr at 1546. (Boender, Netherlands)

2680.5: DHJ59, Wilhelmshaven, Germany (Navy) in CW w/wx at 2032. (Boender, Netherlands)

2716: NUTA, USS Sunbird ASR15 clg Navy Port Ops, Cape Canaveral at 1030; NVVV, USS Normandy CG60 clg New York Tug Control at 0845; NDSL, USS Haleakala AE 25 making short count tests at 0855. Haleakala was in the Pacific between Guam and Hawaii; GNZH, HMS Warship Argonaut F56 clg NavSta New York at 1045; NJLK, USS Kauffman FGG59 wkg COMNAVSURFGROUP-4 at 2100. Kauffman advised their Command that their Helo was inbound to newport; NHPA, USS Stark FFG31 clg Roosevelt Roads Harbour Ops at 0845. Stark apparently didn't realize that Rosey Roads guard Bridge to Bridge VHF Ch. 13 & 16, not HF; Navy Research vessel Deer Island YAG62 clg AUTEC Ops station Foreclose 52 (USN Warship in the Range) at 1000; AUTEC Ops Harbor Utility Craft YFU91 (pronounced phonetically "Why-a-Key 91" w/radio check to AUTEC Ops Research Vessel Range Master at 0100; USN Research vessel Athena 2 attempted radio check w/NHPA, USS Stark FFG31 at 0915. (Stuart, DE)

3319: MGJ, Navy Glasgow at 2212 w/mkr in CW. (Boender, Netherlands)

4125: USCG CommSta Kodiak, AK in USB at 1036 wkg M/V Arco Alaska. Kodiak cleared the freq to allow Casino CG Radio to coordinate a rescue. (Webb, CA)

4134.4: NODH, USCGC Bittersweet WLB389 clg CG CommSta Boston (4428.7 kHz) at 0035 but no comms w/Boston so NMN, Portsmouth, VA responded. (Stuart, DE)

4223.5: 9Hd, Valetta, Malta in CW at 2215 w/mkr. (Boender, Netherlands)

4322: 9VG54/4, Singapore in CW at 1504 w/CQ mkr. (Webb, CA)

4346: YUR, Rijeka, Yugoslavia in CW at 2129 w/mkr. (Boender, Nethelands)

4349: JCS, Choshi, Japan in CW at 1524 w/mkr. (Webb, CA)

4360: Norfolk ICSB clg NFVC, USS Capodanno FF1093 at 0115. (Stuart, DE)

4562.5: JWT, Stavanger, Norway (Navy) in CW at 1952 w/mkr. (Boender, Netherlands)

5177: NNN . . . in CW rptng 2100-2105. Then YL/GG w/Gruppe 13 x2 and into 5F grps. (Mason, England)

5190: USAF A/C King 1 w/rdo check w/DOD Cape at 0945; NKRN, USCGC Bear WMEC901 wkg Cape Radio (NASA) at 1002 w/rdo check; NRDW, USS DeWert FFG45 w/rdo check w/DOD Cape at 1035. Also hrd King2 w/rdo check. All these checks were prior to scheduled liftoff of shuttle. (Stuart, DE)

5500: YL/EE rptng 288 oblique 00 from 2000-2005. After 2005 carrier kept on and tapping heard for many hours. (Mason, England)

6200: NRHY, USS Wasp LHD1 wkg USCG CommSta Portsmouth (NMN) at 0030. The Wasp had been on MARS circuit 14441.5 kHz but no joy so they turned to NMN for a priority phone patch made on 6518.8 kHz simplex; University of Rhode Island Research Vessel Endeavor, WVFQ, wkg NMN w/AMVER msg at 0105. This floating research laboratory is owned by National Science Foundation but is operated by the U of RI Graduate School of Oceanography and was headed to Keykavik Iceland from St. Johns, Newfoundland; St. Georges School Research Vessel Geronimo WYS3261 wkg NMN w/wx observations at 0015. This RV is out of St. Georges School of Newport, RI; NRDC, USCGC Campbell WMEC909 wkg USCG CommSta Boston who also on 6200 kHz at 0130. Unusual for this freq to be used in simplex mode as normally it is used duplex w/6506.4 kHz; NMMJ, USCGC Sherman WHEC720 wkg CAMSPAC San Francisco on 6506.4 kHz at 1100. (Stuart, DE)

6315: YQI3, Constanta, Romania rcvng "TR" reports (position, destination, miles in 24 hrs, miles to go, wx, fuel consumption) in CW 1730-1800 from M/Vs Calarasi (YQDT) bound Avonmouth, UK; Bunat (YQCU) bound Costanta; Finiasi (YQEW) bound Beirut, Lebanon; Azuga (YQBD) bound Mersin, Turkey; Sibiu (YQBO) bound Zonguldak, Turkey; Miercurea-ciuc (YQTI) bound Kandla, India; Floresti (YQGZ) boudn Bangkok, Thailand. All in Mediterranean Sea except Floresti which was in Red Sea. Similar activity can be hrd on 8420 and 12630 kHz. (Chinaski, Italy)

6801: SLHFB, "S" hrd weekly at 0008. (White, ME)

6840: YL/SS in AM at 0230 w/4F grps. (Penson, MD) This is a daily sked and is paired w/9958 kHz. Short msgs (2-5 gprs) are sent w/transmission lasting exactly 10 mins. Other bcsts have been reported on 7725/10324 kHz at 1030 and 11491/16310 kHz at 1830. The voice activity is similar to the MCW tfc on 5264/6792 kHz at 0030, also w/daily sked. (Ed.)

6850: Foghorn signal at 0256. (Penson, MN)

6853: TK rotbg Iscar Juki frin 2000-2005. Msgs in 5F grps for 319 and 617 in German. (Mason, England)

7320: YL/EE w/1-0 count and 835 from 2300-2310. After ten tones Count 137 and into 3/2F grps. Also on 5750 kHz. (Mason, England)

7394: SLHFB "V" w/good signal. His xmtr uses mark/space signal. Hrd at 2350. (White, ME)

7535: Norfolk SESEF clg NZLL, USS Kitty Hawk CV63 at 1900. Kitty Hawk recently out of Service Life Extension Program (SLEP) at Philadelphia Naval Shipyard and was on shakedown cruise testing HF gear; NTSA, USS Tortuga LSD46 wkg Norfolk SESEF at 1600 testing all modes; NNJE, USNS John Ericsson T-AO-194 wkg Norfolk SESEF at 1950 w/HF tests. (Stuart, DE)

7605: YL rptng Victor Lima Bravo 13 Zulu 50 Mike at 1750. (Mason, England)

7651: VOA Feeder in ISB at 0320. (Thomas, MO)

8241.5: AAED, US Army Vessel CW3 Harold C. Clinger LSV2 clg USCG CommSta Honolulu at 1310. Clinger seems to call Honolulu most mornings around 1300 UTC on 8 MHz SCN; GXRH, British Warship HMS Endurance A171 clg Portishead Radio at 0855. Endurance is the Support and Guard vessel for the British Antarctic Survey; NODS, USCGC Salvia WLB400 wkg USCG CommSta Portsmouth, VA at 1700. Salvia requested Portsmouth contact CommSta New Orleans via landline and bring circuit up; NRPN, USCGC Ironwood WLB297 wkg USCG ComSta Kodiak, AK at 1645. The Ironwood was requesting an 8 MHz RTTY freq; NBTM, USCGC Polar Star WAGB10 wkg ComSta San Francisco (CAMSPAC) on 8765.4 kHz at 0820 requesting 6353 kHz for RTTY. (Stuart, DE)

8395: DHEC, German cargo container owned by Hapag-Lloyd sending msgs to SUP, Port Said, Egypt. Name of vsl is Hamburg Express. Was in East Med. during Rotterdam-Jeddah trip. Msg noted "No Iraq cargo on board, vessel not calling Gulf Ports" then reported airguns on board for sport activity. CW at 1545. (Chinaski, Italy)

8482: SPH, Gdynia, Poland in CW at 2206 w/mkr. (Boender, Netherlands)

8515: 5AT, Tripoli, Libya in CW at 2250 w/CQ mkr. (Boender, Netherlands)

8580: URL, Sevastopol, URS in CW at 0129 w/CQ mkr. (Boender, Netherlands)

8681: SVI4, Athens, Greece in CW at 2052 w/mkr. (Boender, Netherlands)

8697: CHF, Canadian Forces Halifax, Canada in CW at 0200 w/wx, ice reports & navigational warnings. (Boender, Netherlands)

8719: NTWX, USS Hoist ARS40 wkg COMSUPRON-8 at 1120. the Hoist was searching for downed hel and fuel tanks w/divers in the water and a LCU on scene to assist in recovery; LCU 1657 wkg ACU2 (Assault Craft Unit) Little Creek, VA and NTWK, USS Hoist ARS40 at 2000. (Stuart, DE)

8766: USCG ComSta Portsmouth wkg Ocean King in USB at 1148. Crew member on Ocean King injured & Portsmouth advised "Keep him covered to prevent shock." Ocean King located at Cat Cay. Off at 1200. (Kinsland, GA)

Abbreviations Used For Intercepts

AM	Amplitude Modulation mode
BC	Broadcast
CW	Morse Code mode
EE	English
GG	German
ID	Identifier/led/lcation
LSB	Lower Sideband mode
OM	Male operator
PP	Portuguese
SS	Spanish
tfc	Traffic
USB	Upper Sideband mode
w/	with
wx	Weather report/forecast
YL	Female operator
4F	4-figure coded groups (i.e. 5739)
5F	5-figure coded groups
5L	5-letter coded groups (i.e. IGRXJ)

8814: Fox 1 & Fox 2, Italian Navy Technicians testing equipments in Laspezia shipyard. Off at 1440. (Chinaski, Italy)

8989: A/C 90011 clg McClellan in USB at 0423 for p/p to 22nd Air Force command post. (Webb, CA)

9041: YL/EE w 3/2F msg on USB at 1533. (Margolis, IL)

9115: LRB91, Rivadavia, Argentina, feeder w/program in SS on USB at 2345. (Margolis, IL)

9450: YL rptng Foxtrot Bravo from 1700-1705 w/tones. Then GG 5F grps for 653 and 361. On same freq as EE Radio Moscow bcst. (Mason, England)

10276: ZAF, MFA Tirana, Albania in CW at 1450 wkg ZAF4, ZAF6, & ZAF8 w/clear & crypto (5F grps) msgs. Some nbrs were cut: A = 1, U = 2, D = 8, N = 9, T = 0. At 1510 circular msg sent requesting collaboration to Embassies for democratic process & reporting instructions for refugees claims. Believe this is "MP1" freq. Foll day hrd on 10288 w/similar tfc. Very bad fist & chirping tone. All tfc in Albanian. (Chinaski, Italy)

10612: Foghorn at 0217. Does anyone know what these are?? (Penson, MN)

10637: KKN50, State Dept, Washington, DC clg KWT91 in CW at 2238 w/svc msg "ZHQ 11543/113376." (Margolis, IL)

10643: SLHFB "S" at 1535. (Chinaski, Italy); SLHFB "S" at 2300, fading out at 0230. (White, ME)

10694: SOK269, PAP, Warsaw, Poland w/nx in Polish in CW at 2138. (Margolis, IL)

10780: MAC A/C 6164 called Cape Radio for HF signal check at 0336 which was about 1 hr. 45 mins prior to planned Space Shuttle launch. Hrd in USB. (Webb, CA); Cape Radio (NASA) wkg Liberty Star (Booster Recovery vessel) at 0940. (Stuart, DE)

10944.8: CFH, Canadian Forces, Halifax, NS, Canada in CW w/QRA tape at 0200. (Thomas, MO)

11069: ZAF8, u/i Albanian Embassy wkg Tirana. (See 10276. (Hrd at 1407. (Chinaski, Italy)

11071: ZAF4, u/i Albanian Embassy wkg Tirana (See 10276) at 1409. Sent QRM5 MP1 then sent V's. Bad fist & tone. Both ZAF8 & ZAF4 hrd other days on same freqs. (Chinaski, Italy)

11108: YL rptng Papa November at 0600. At 0605 5F grps in GG for 484/767/825/877/602/464/905 & 293. Msg for 484 was only 2 grps! - 48285 36187. Also hrd on 7404, 5015 & 2707 kHz. (Mason, England)

12584: 5MMS, M/V Nadelhorn, Liberian flagged in CW CW at 0415 passing msgs to KPH, San Francisco, CA while at position approx 1200NM NW of S. Francisco. Was experiencing a violent storm. Headed Westbound. (Chinaski, Italy)

12690: NMN, USCG, Portsmouth, VA in CW at 1815 w/NUKO (Notice to all Allied Merchant Ships) tfc. (Boender, Netherlands)

12792: HZG, Dammam, Saudi Arabia in CW at 1830 w/wx & tfc list. Reported restricted visibility in Persian Gulf due to smoke (oil clouds effects). (Chinaski, Italy)

12855: UBF2, Leningrad, URS in CW at 1820 w/tfc list. (Boender, Netherlands)

12865: UPW2, Leipaja, USSR in CW at 1700 w/tfc list. (Chinaski, Italy)

12887.5: EAD, Aranjuez, Spain in CW at 1600 w/tfc list. (Boender, Netherlands)

13208.5: OM/EE announcing "zero one two five on one three two oh eight point five-Over." Called for several hours in USB. First hrd at 1900. (Thomas, MO)

13217: OM/SS calling Bogota in USB at 2100. (Thomas, MO)

13244: Aeroflot 0786 clg MacDill AFB in USB at 1230. ID's as "Soviet VIP Flight to pick up Soviet VIP at Andrews." Stated they left Havana late and would take on 45 tons fuel and drinking water at Andrews. Off at 1245. (Kinsland, GA)

13656: SLHFB's D, C, P, S hrd at 2328. At 0010 again noted all of these. The "S" had variable speed for the three dots. (Whited, ME)

13898: CLP33, EmbaCuba Addis Ababa, Ethiopia receiving 5L grp tfc from CLP1, Havana, Cuba. CW at 0306. (Chinaski, Italy)

14280: OM/EE in AM at 1300 clg 280 and into 5F grps at approx 1305. Signal badly overmodulated & could hear him as high as 14295 kHz and about the same distance down from 14280. (Brown, LA)

14362: SOO236, PAP, Warsaw, Poland w/nx in Polish. CW at 1405. (Margolis, IL)

14383.5: Regular USB MARS Net. Hrd NNN0CTH - USS Ranger, NNN0CYJ - USS Stark, NNN0KRQ - Cincinnati, OH, NNN0MCP - USMC Cherry Point, NC. (Chinaski, Italy)

14408: OM/RR rptng 55555 between 1600-1605. On other days OM/RR w/00000 for five minutes at skeds of 0900, 1400 & 1600. (Mason, England)

14440: Foghorn w/various "sound effects." Hrd at 0156. (Penson, MN)

14441.5: NLBH, USS Long Beach CGN9, NNN0CLB at 0110; NJSD, USS Camden AOE2, NNN0CEI at 2045 clg "Any Stateside MARS Station." (Stuart, DE)

14445: CIW2102 to Canadian Forces afloat with p/p welfare tfc to Canadian A/C's in USB at 0200. (Thomas, MO)

14453: CIW803, CFARS Gander, NFLD, Canada in USB at 1740 w/patches w/CIH. Later 3UP cld but unreadable by CIW803 due weak sig. (Chinaski, Italy)

14612: FVZ91, Gendarmerie St. Denis, Paris, France in CW at 1550 receiving clear FF unclas msg from Gendarmerie Vallence. Off at 1555. Seems to be a standby ckt. (Chinaski, Italy)

14676.5: U/i Police Hq or other Agency in Argentina in USB at 2125. OM/SS dispatching Fonograms. Hrd "Policia Provincia de Buenos Aires." Duplex ckt. Believe it can be an interprovincial net. At 2135 a double-tone siren-like signal. Off at 2137. (Chinaski, Italy)

14811: YL/EE counting 1-0 and announces 632 from 1300 to 1310. After ten tones Count 210 and into 3/2F grps. Rptd 3 hrs later but then was jammed. (Mason, England)

14910: OM/SS at CLP1, MFA, Havana, Cuba in diplo comms on USB at 0005 wkg CLP7, EmbaCuba, Brazzaville, Congo. (Margolis, IL)

14930: YL/EE rptng 950 x3, 70639, 043 from 2100-05. Then five tones and into 5F grps. Also on 11190 kHz. This set up has always been in GG. Very rarely is EE sent. (Mason, England)

15610: YL rptng Juliet Bravo w/tones 0730-0735. Then GG 5F grps for 606 and 995. Rptd on 17430 at 1000. (Mason, England)

15920: CFH, Halifax, NS, Canada in CW w/QRA tape at 0025. (Thomas, MO)

16591.5: 6WW, Dakar, Senegal (French Navy) in CW at 2045 w/call mkr. (Boender, Netherlands)

16755: PPLW, M/V Marium, Brazilian flagged in CW at 0955 passing urgent msg to PPO, Olinda, Brazil re two stowaways on board who taken by Algerian Coast Guard just off the port. Ship proceeding Gibraltar. (Chinaski, Italy)

17288.7: FFL84, St. Lys, France on USB at 1738 in FF comms w/uniden ship. (Margolis, IL)

18203: MFA Algeris in CW at 1400 sending clear FF msgs to various Embassies in Europe & Africa. Off at 1425 when 18757.5 kHz went on. (Chinaski, Italy)

18210: GKX63, Portishead Aero, England on USB at 1516 w/Air-to-Ground p/p's. (Margolis, IL)

18323: Andrews AFB, MD in USB at 1752 wkg SAM 201 ref ordering galley supplies. (Thomas, MO)

18511: VOA Feeder in ISB at 1800. (Thomas, MO)

18599.5: U7A & I6C in 2-way comms on USB at 1735 re packet radio xmsn on 18597.3 kHz. Took 45 min break at 1745 & returned at 1830, then moved to freq Foxtrot 5 for better comms. (Margolis, IL)

18757.5: MFA Algeria in CW at 1425. Similar to 18203 kHz. This freq active when other freq ended. Gave interesting press review of Algerian newspapers. Later other circular msgs in FF. (Chinaski, Italy)

19295: YL rptng Delta Bravo 0900-0905. Then GG 5F grps for 038 and 329. (Mason, England)

19440: Radio Moscow feeder in AM with OM/EE announcer at 2330. (Thomas, MO)

19497: AFC372 in USB with p/p welfare tfc at 2355. (Thomas, MO)

20150: Possibly an Algerian diplo w/comms in AA on USB at 1317 after RTTY xmsn. (Margolis, IL)

20330: MFA, Riyadh, Saudi Arabia in CW at 1441 prior to an RTTY xmsn. (Margolis, IL)

20361: MFA, Riyadh, Saudi Arabia with s/off in CW at 1439 after an RTTU xmsn. (Margolis, IL)

20444: U/i in CW at 2139 w/5L grps (cut nbrs) using ADGIMNRTUW. (Margolis, IL)

20623.5: USN MARS p/p tfc NNN0TQO with NNN0NCO in USB at 0200. (Thomas, MO)

20766.5: CLP1, MFA, Havana, Cuba w/CW tfc in SS at 1950. (Margolis, IL)

20936: NTEX, USS Texas CGN39, NNN0CUG wkg NNN0IBM at 2350. (Stuart, DE)

20957: Regular Diplo activity in CW between 1000 & 1700. Some clear unclas EE msgs & coded 5L grps tfc. Net Control is 00. Other stns hrd: 17, 21, 22, 23, 23, 25, 31, 41 & 49. Headers - Head of Mission, Head of Chancery, AGUSCD, GNAICTEMA. Cities mentioned were Accra, Tema, Bangui, Paris, Cairo Whindhoek. Prob Ghana Diplo. (Chinaski, Italy)

21811: YL/EE with 1-0 count and 279 from 1600-1610. After ten tones Count 225 and into 3/2F grps. Also on 24978 kHz. (Mason, England)

22261: ELB17, Liberian ship Bandao in CW at 1435 w/msgs to Rogaland. Bound San Cristobal & proceeding at 11 kts due to fault in pneumatic maneuvering system. (Chinaski, Italy)

22281: FBAN, Ouragan, French Warship in CW at 1410 sending unclas clear FF msg to FUV, Djibouti Naval re mailbag delivery. (Chinaski, Italy)

22930: NAS North Island, CA, Carpenter to Stingray with p/p welfare tfc. Some to onbase #'s & some to Autovan #'s in USB at 2315. (Thomas, MO)

23134: 46C, Italian Air Force, 46th Airwing in Pisa wkg I-1991, a C-130 airlift carrying 23600 lbs of various Tornados spare parts from UAE Italian airbase to Pisa AFB. Long Distance Freq Primary CH is 6715 kHz. (Chinaski, Italy)

25262: OXZ, Lyngby, Denmark in CW at 1548. Due to bad propagation, most of transmission unreadable. (Webb, CA) ■

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CB SCENE

BY BILL SANDERS, SSB-295

27 MHz COMMUNICATIONS ACTIVITIES

A noise annoys. It's as simple as that. Some CB rigs have a noise blanker (NB) circuit, others have an automatic noise blanker (ANL) circuit. Each type of circuit specializes in trimming down certain types of radio noises because each noise needs its own approach, whether it's pulsed, or atmospheric. Some CB rigs have either a NB or an ANL, and sometimes the circuit is permanently "on" and constantly operating even if it's not required. But noise is the enemy of good communications, and AM mode is where it lives. Mobile CB'ers have been doing battle with noise for thirty years.

A recent weapon that declares war on noise is Radio Shack's Realistic TRC-423 mobile transceiver. This has an ANL and also a NB. You can switch either or both in or out of the circuit at will via front panel buttons. Use both circuits together if you want!

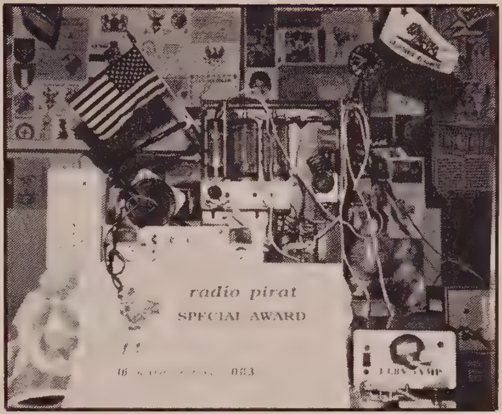
The Realistic TRC-423 has dual front panel and mike-mounted channel up/down controls, adjustable RF gain, and adjustable mike gain. There's also an instant Channel 9 button, plus front panel LED's to indicate transmitter output and relative incoming signal strength.

This rig shows up at only $119.95 in the current Radio Shack catalog, and we think it's a good choice for those who are plagued by noise problems from static, alternators, electric motors, and what-have-you.

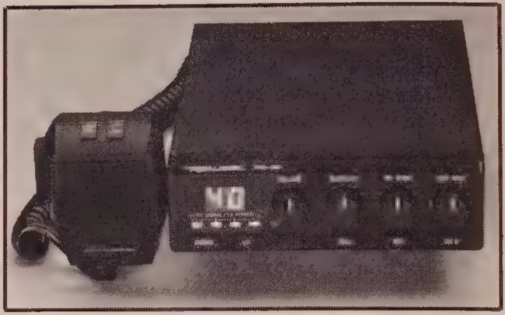
A Few Good Words

We have had some inquiries and comments from readers regarding Antron antennas, mostly in the "good" column. Like a letter that came in from Dean, Unit 320, of Manchester, MA. He tells us that a few of his friends recently purchased the Antron 99 antenna and like its bodacious performance. He hopes we can discuss and show this antenna.

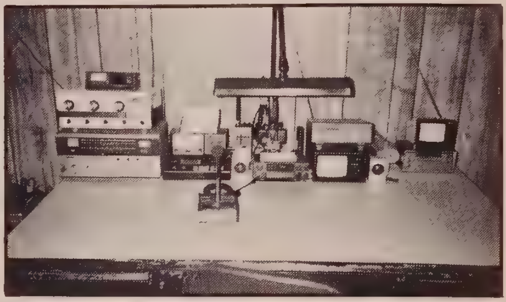
All we can tell you is that the company that makes the Antron 99 recently advised us that they are no longer going to market this antenna under the Antron brand name. From now on this antenna will be sold under the name Solarcon, which is the name that has always been used for the company's other antennas. The address of Solarcon is 7134 Railroad Street, Holland, OH 43528. We don't know why, but Solarcon didn't



The home-brew rig used by Tony (16-RP-003) in Belgium.



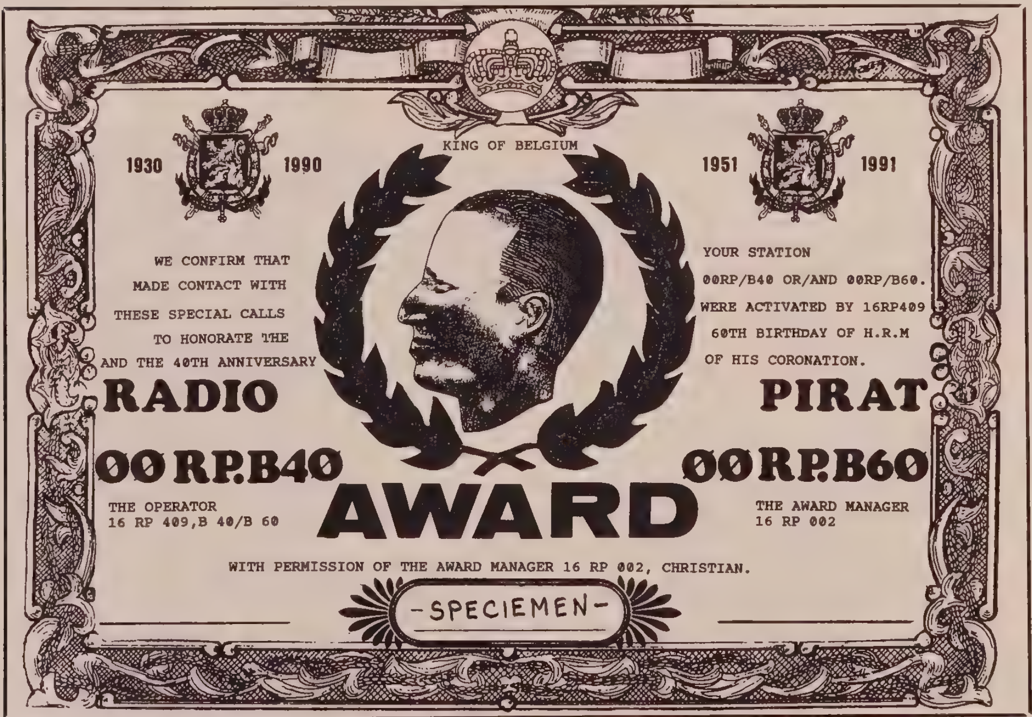
Radio Shack's TRC-423 has two types of noise squashers.



In Denison, TX the radio room of Randall K. Reynolds is operational on CB and also the 10 meter ham band.

Executive
VOLUME

International Crystal produced the no-frills 3-channel "Executive 10" about thirty years ago. Not a bad little rig.



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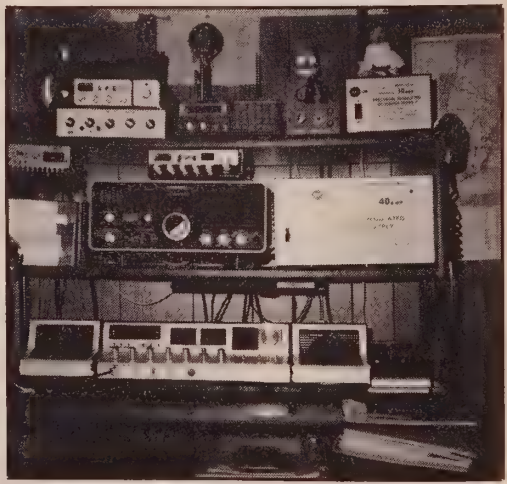
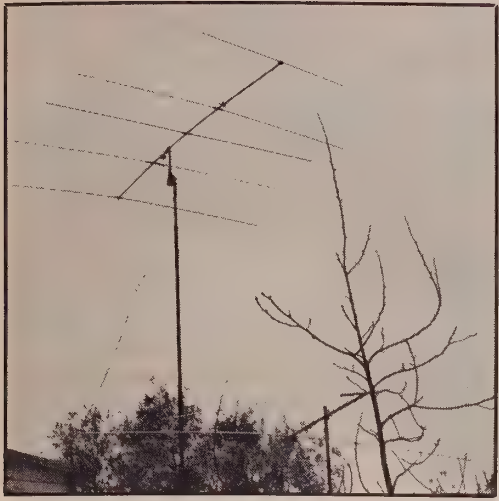
-SPECIEMEN-

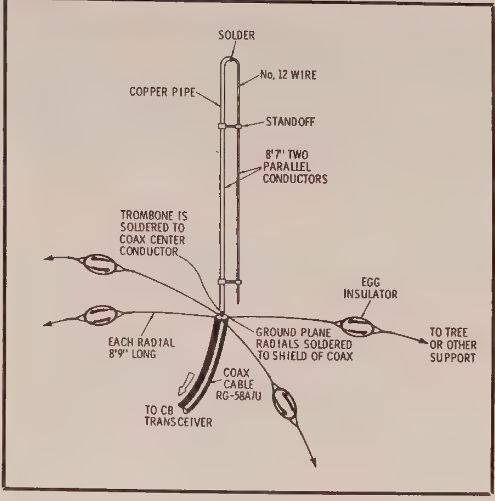
This swift looking certificate is being offered by a Belgian group for a limited time. See text.



This impressive layout belongs to Don, RIS-770, of Woonsocket, RI. Don's been into CB'ing since the late 1960's.



The antennas at Belgium's 16-RP-003 consist of a 5-element beam, and (barely visible at the lower right, in the trees) a 2-element beam.



Here's a base station antenna that can be constructed without much fuss or cost. You might be able to assemble it from existing parts you can round up.

provide us with information on their products, only the name change.

Combo Operation

A letter from Randall K. Reynolds, Denison, TX observes that he's active on 11 meters as *Pecos Bill* and *Texas Cannonball 13*, plus being a 10 meter ham known as KB5IZK. Randall is located seventy miles north of Dallas, and three miles from the Oklahoma border. That puts him in a good location to work loads of stations in all directions.

Randall is also into SWL'ing and scanning. Up on the roof he's got a ground plane, a 5/8-wave omni-directional, a three element beam, and more.

Call For A Memory Or Two

Nick Geraci, Lookout, CA wrote to ask if we could regularly run a CB flashback to say something about CB radio, CB'ers, and equipment from 10, 20, 30 years ago. Well, we don't want to dwell much on the past here, but a small taste might be fun.

Let's look at one of the few early small CB rigs. It came out about 1961, an era when most CB equipment was quite bulky. The International "Executive 10" (CTZ-10) had three crystal controlled transmit channels coupled with a tunable 23-channel receiver. The six tube receiver was a superhet with two i.f. stages, one r.f. stage, and an ANL. There was no squelch, no push-to-talk, no meters. The set could operate on 6, 12, or 24 VDC, or (with optional external power supply) from 117 VAC. A little no-frills CB for $59.50 from International Crystal, of Oklahoma City, OK. International had a full line of CB fine gear in all price ranges, and was a major force in CB in the early years.

From Belgium

Our friends at Belgium's "Radio Pirat" group wrote to thank our readers for the enthusiastic support shown 11 meter operators in Belgium for their efforts to stop what they feel has been harassment and unreasonable treatment by their nation's telecommunications authority. We reported on this problem several issues back.

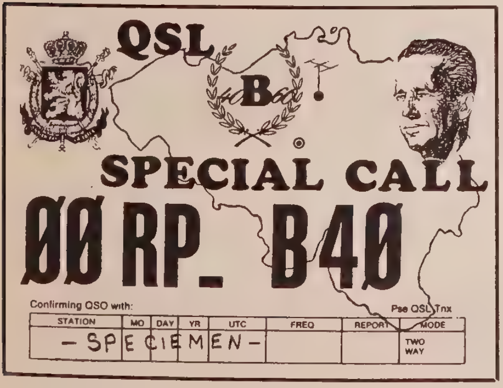
Tony, 16-RP-003, of this group also tells us that this year (1991) his nation is celebrating the 60th birthday of His Royal Majesty Baltwin I, King of Belgium. At the same time, they are celebrating the 40th anniversary of His Majesty's coronation. The RP group has special ID's for its club station during 1991, 00-RP-B40 and 00-RP-B60, to help mark these events. Special QSL's for these stations are being sent out.

The group is also offering a handsome award to operators around the world who contact three Belgian stations. This is available for US$3 plus copies of the QSL's confirming the contacts. The address is Radio Pirat DX Group, P.O. Box 3, B-2250 Olen, Belgium.

Our number in this group is 2-RP-769.

REACTing

REACT, which has done such a fine job of organizing Channel 9 monitoring teams, tells us that Allstate Insurance has helped them prepare a leaflet entitled, "Getting Help by CB Radio." This is very handy for



QSL

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00 RP- B40

Confirming QSO with:

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- SPECIEMEN -							TWO WAY

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informing people of the safety and emergency uses and benefits of CB radio, and the proper way of using a CB set to summon such aid when it is required for one's self or others. Any REACT Team can supply you with a copy, or you can request a free copy by mail. Americans, send a stamped, self-addressed large return envelope to: REACT Help, Box 998, Wichita, KS 67201. Canadians, send a stamped, self-addressed, large return envelope to REACT Help, Box 942, Sutton, ON L0E 1R0. Allow about ten weeks for processing and delivery.

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The radiating element is folded over into a trombone-type affair that looks somewhat unusual but works, nevertheless. The construction of the antenna isn't at all critical, however, it's certainly a good idea to weatherproof all solder connections to prevent moisture from getting through. You can use sealing putty, caulk, epoxy, or silicone sealer (Radio Shack 64-2314 or equivalent).

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The ground plane radials are made from more No. 12 wire measured out to exactly 8 ft. 9 in. between the coaxial cable and the insulators. That means, when you measure the wire, leave an extra inch or two for connections so that the final length with the insulators attached is 8 ft. 9 in. You'll need four of these radials, and they are positioned at 90 degree angles from one another.

The insulators may be either egg or dogbone types. Radio Shack 275-1335, 275-1336, or equivalents, are fine. You'll need four insulators.

Helpful Hint

R. Yahia, of PA passes along a handy hint that we remember from years back, but haven't heard mention of in a long time. He tells us that his business requires him to do a lot of driving over long distances. He is always accompanied by several other vehicles. Each vehicle is CB equipped, and the primary purpose of the CB is for the vehicles to be able to remain in constant contact with one another.

When the vehicles tried staying tuned to Channel 19, there was a lot of chatter that stopped them from communicating between themselves as often as they wanted. When tuned to assorted other channels, they found themselves traveling through areas where their almost continuous business and personal chatter was unwelcome on local monitor channels.

A trucker suggested that they disconnect the antennas from their CB rigs and, instead, hook up dummy loads like those made from No. 47 bulbs. He said that the change would considerably reduce their receiving and transmitting range so that they could pretty much pick any channel (except perhaps Channel 19) and not bother or hear anybody else, while still having sufficient range to communicate privately, and as much as they wanted within their own small convoy.

I remember when this was a popular trick, especially useful for persons traveling in groups of cars or RV's, as when on vacation, or touring, or moving. Good to keep in mind. You can pick up a dummy load at just about any CB shop.

Good hearing you on the band, and we hope you check in to this net again next month. If you have a shack photo, a QSL you'd like to share, a CB story, a question or comment about CB, please send along what you have. This is the only 11 meter column appearing in a national publication, and it can only be as good as its readers make it with their input. ■

HOW I GOT STARTED

Ivan Cholakov, a DX'er in Bulgaria. Happy birthday, Ivan!

POP'COMM invites readers to submit, in roughly 150 words (more or less), how they got started in the communications hobby. They may be submitted (preferably) typewritten, or otherwise easily legible. If you have a photo of yourself taken recently, or when you got started, please include it with your submission. We can't return or acknowledge material, whether or not it is used. Your story need be submitted only once as we keep the material on file and will consider it for future issues. All submissions become the property of *Popular Communications*.

Each month, one submitted personal story will be selected for use in our pages. That person will receive a 1-year gift subscription (or subscription extension if already a subscriber) to *Popular Communications*.

Entries will be judged taking into consideration if the story they tell is interesting, amusing, or unusual. We reserve the right to make any necessary editorial changes to improve style or grammar.

Address all entries to: How I Got Started, Popular Communications, 76 North Broadway, Hicksville, NY 11801.

Our Winner for October

The winning entry for October '91 was sent in by Ivan Cholakov, 4120 Katunitaa, Plovdivska obl, Bulgaria. Ivan wrote:

"I was born in Sofia, Bulgaria on October 26, 1971. My listening career began at age 13, in 1984. Like many others in Eastern Europe at that time, I began listening to Western broadcasters because the official news media during those years was heavily censored. I started with the Bulgarian programs of RFE, BBC, DW, etc., and gradually I became interested in DX'ing.

"DX'ing in those times was an unsafe hobby. I was nearly tossed out of school for writing to Western broadcasters. Later, I met two other DX'ers who (in 1975) had been imprisoned for five years for DX'ing, which qualified as espionage.

"I modified a Russian-made shortwave receiver that I kept playing most of the time. Together with English and Bulgarian, I also speak Russian and can understand most other Eastern European languages. I enjoy tuning in the world. Also, I am studying International Economic Relations in Sofia, and find the information very useful." ■

BY GERRY L. DEXTER

CLANDESTINE COMMUNIQUE

WHAT'S NEW WITH THE CLANDESTINES

It can now be confirmed that the long-running, anti-Zimbabwe clandestine station *Radio Truth* is, indeed, off the air. The station, which was based in South Africa, is reported to have gone off the air in September, 1990. The one or two loggings of it which were reported after the fact were apparently in error. Radio Truth was the last of several clandestines which have operated from South Africa over the past three decades. Others included A Voz Resistencia do Galo Negro, which now operates only from Unita-held territory in southern Angola, and another anti-Angolan, A Voz de Verdad (Voice of Truth). The Voice of the Mozambique National Resistance was still another South

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To this end, we will support all those groups and associates dedicated to the same philosophy. Where they are denied a platform by government or Party decree or by mob violence, Radio Truth will ensure that their voice is heard.

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7410 at 0507-0547 with its wolf howl interval signal and Neil Young music, then a speech. This station is active only very rarely, using 7410 or 6240.

Another broadcaster to which the quasi-clandestine label can be applied is the *New*

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(Continued on page 74)

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BY GERRY L. DEXTER

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Patria Libre, revisted. The curious clandestine situation continues in Colombia. In mid-December, 1990, the Colombian military captured the headquarters of the Revolutionary Armed Forces of Colombia (FARC) and claimed to have destroyed what was radio broadcasting equipment. At about the same time the Colombian clandestine *Radio Patria Libre* disappeared. A connection? You might think so, but Patria Libre isn't run by FARC but by the ELN—the National Liberation Army. So, although, the two events might appear to have been related, it apparently was just a coincidence. Patria Libre's silence continued for some months before it popped up again this past spring, sometimes operating on a frequency somewhat lower than its usual 6300 area: Sheryl Paszkiewicz of Wisconsin noted them on 6260 at 0104, later jumping to 6270.

The other half of the Colombian clandestine puzzle, El Pueblo Responde, continued to operate during Patria Libre's silence, though at one point there were reports it was being jammed. Robert Ross of Canada reported the station, again, in the 6300 area, at 0109 with many IDs for "El Pueblo Responde," mentions of "Libre" and "Colombia" to closing at 0115, which follows Patria Libre's schedule pretty closely.

Sheryl Paszkiewicz reports hearing the quasi-clandestine *Voice of Tomorrow* on 7410 at 0507-0547 with its wolf howl interval signal and Neil Young music, then a speech. This station is active only very rarely, using 7410 or 6240.

Another broadcaster to which the quasi-clandestine label can be applied is the *New Star Broadcasting Station*, believed to broadcast from Taiwan, beaming to the mainland. It airs mostly numbers in Chinese and is often heard quite well on 8300 at 1300 and 1400.

It now seems all but certain that the stations of El Salvador's Farabundo Marti National Liberation Front—Radio Farabundo Marti and Radio Venceremos have left shortwave and are operating only on local FM frequencies. Throughout their entire run on shortwave the government's Radio Nacional was inactive on shortwave. Now that the clandestines have left there are reports that El Salvador will soon have its shortwave voice back!

Look for changes or reshufflings in a couple of other areas as long-running conflicts approach resolution. The several groups which have fought the Ethiopian government for years may make changes in their stations, now that the former government has been defeated. Some stations may go off, but those that continue will probably be legit operations.

(Continued on page 74)

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We are Zimbabwe nationalists in the true sense of that word and we do not support any specific factions or tribal grouping within our society.

Through our own reporters and through friends all over the country, we have access to the truth in all its forms—the spoken word, documents and photographs.

It is our task to broadcast the facts about Zimbabwe, our neighbours and, where appropriate, the world at large. We will draw conclusions and pass relevant comment, for the availability of constructive criticism is a healthy sign in any country. Since this is denied through normal channels in Zimbabwe, it is necessary to have a clandestine radio station that can fulfill the role.

We are unashmedly anti-Marxist. We believe this to be an evil and worthless ideology that can only bring disaster to our land. We will expose its ruthless nature, its reliance on force and its utter failure to bring anything but fear, misery and poverty to those countries that subscribe to its principles.

We believe fervently in the principles of democracy and the outstanding merits of free enterprise. We value highly the basic freedoms inherent in the democratic system and tradition: freedom of thought, expression, association and worship and the right to life and liberty for every individual.

To this end, we will support all those groups and associates dedicated to the same philosophy. Where they are denied a platform by government or Party decree or by mob violence, Radio Truth will ensure that their voice is heard.

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We abhor corruption and nepotism in our public life and the declining standards of public administration. It is our desire to see an efficient, incorrupt and apolitical public service, impartial judiciary and security forces that are loyal to the state and its people—not to a political party.

Once again, contrary to ZANU(PF) mouthings, we are not a relic of colonialism, nor do we envisage white rule ever returning to Zimbabwe. We accept black rule, but we wish to be just, efficient and democratic.

For all these reasons, Radio Truth is strongly opposed to the concept of a one-Party State, which conflicts with everything that we stand for.

We will resist ZANU(PF) because we know that their policies can bring nothing but hardship and misery to our people and will destroy our national pride.

So stay tuned to Radio Truth: the voice of Free Zimbabwe.

A "position paper" once issued by the now silent Radio Truth.

BROADCAST DX'ING

BY ROGER STERCKX, KVT1JH

DX, NEWS AND VIEWS OF AM AND FM BROADCASTING

But Does Mickey QSL? A letter from Richard Sprau, Registered Monitor KFL4DN, of Lake City, FL reports that Walt Disney's place in Florida has a station in the FM band. It's got an Experimental license with the call letters KA2XXE, and operates on 107.9 MHz from Columbia, FL. The station broadcasts a five-minute repeating loop that runs continuously, day and night.

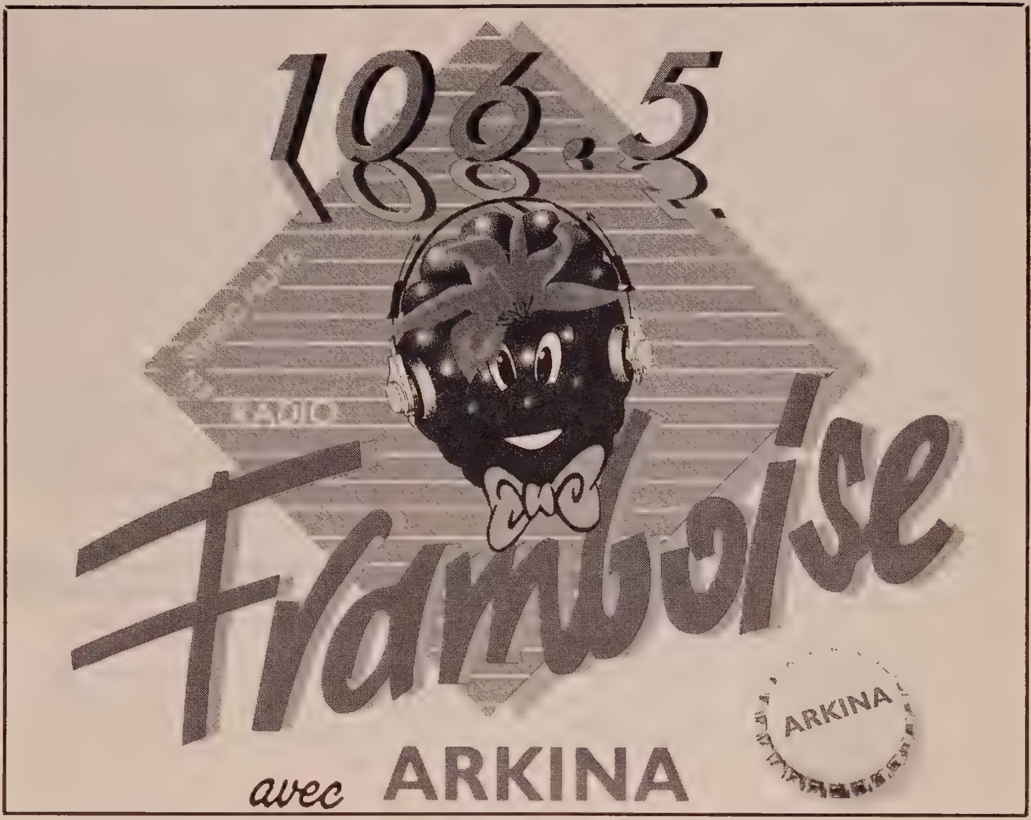
Richard reports that KA2XXE is probably able to be received over a wide area of northern Florida. You can pick it up on a car radio while driving on I-75 north of Lake City just after you cross into the state from Georgia.

A Change: Station WZLS/96.7 MHz, better known as Top 40 rocker "Z-97" around Valdosta, GA went dark one day recently as part of a station sale that was to put the station back on the air about a month later as WVCM with a country music format.

WZLS's former owner was quoted as saying he had been running the station for twenty seven years and felt he was ready to quit.

Thanks to Ira E. New, of Valdosta, for keeping us posted.

KEZY Report: Jim Cosper, N6MKJ, of Huntington Beach, CA passed along some info and photos of KEZY/95.9 MHz, of Anaheim, CA. This station operates a 24-hour sked with a current hits (CHR) format. The studios are at 1190 E. Ball Road, Anaheim. Since April of 1971, the transmitter has been located in Anaheim's Peralta Hills at an altitude of 962 ft. (ASL).

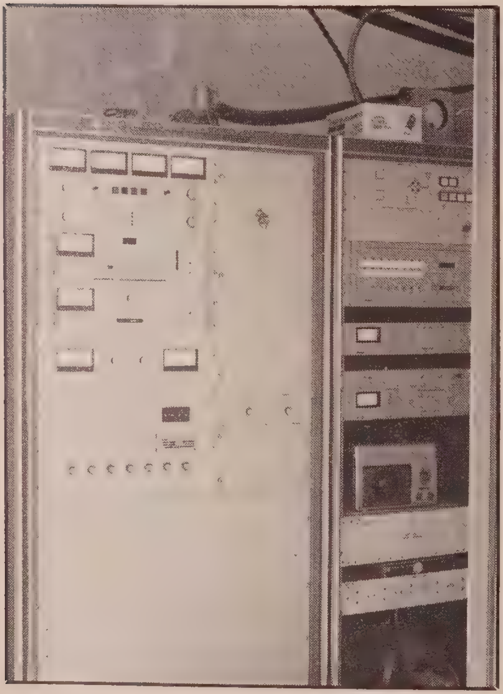


This sticker is from low power FM'caster Radio Framboise, 106.5 MHz, a French language station in Switzerland. How 'bout that tomato in the center? (Courtesy DeMartin Ferdy, Switzerland.)

KEZY's transmitter is a 5 kW stereo job made by Continental, although it's only run at 4.6 kW.

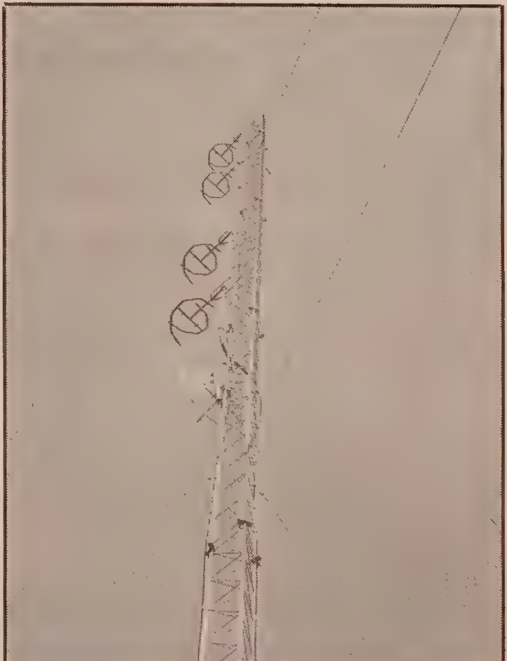
The station began operation on April 16, 1961, as KEZR-FM with 640 watts (ERP). Some years later the callsign was changed to KEZY, to match it's AM sister-station.

Gone, But Not Forgotten: According to a note from Gary Hamlin, Registered Monitor KNY2AAW, Utica, NY, something was missing. That would be WYUT-FM/92.7 MHz, of Herkimer, NY which played "Music of Your Life" oldies until one day last



The KEZY transmitter, in a close-up. (Courtesy Jim Cosper, N6MKJ.)

High up in the Peralta Hills of Anaheim. That's where they located KEZY's transmitter. (Courtesy Jim Cosper, N6MKJ.)



A better look at the KEZY antenna array. (Courtesy Jim Cosper, N6MKJ.)

Applications For New FM Stations

AK	Nome	96.1 MHz	100 watts
CA	Garberville	103.7 MHz	200 watts
FL	Milton	90.5 MHz	6 kW
FL	Zolfo Springs	106.9 MHz	6 kW
IA	Vinton	107.1 MHz	6 kW
IN	Crown Point	90.5 MHz	28 kW
KS	Clearwater	98.7 MHz	
KY	Danville	88.1 MHz	170 watts
ME	Searsport	101.7 MHz	6 kW
MO	Asbury	103.5 MHz	6 kW
MS	Pearl	93.9 MHz	
MT	Laurel	101.7 MHz	100 kW
NM	Clovis	102.3 MHz	25 kW
NY	Binghamton	91.5 MHz	
NY	Glens Falls	95.9 MHz	370 watts
NY	Saugerties	92.9 MHz	8 kW
OH	Newark	91.7 MHz	600 watts
OH	Reading	89.3 MHz	340 watts
OK	Langston	89.3 MHz	150 watts

Construction Permits & Call Letters Deleted

WMQZ	Allen, KY	88.1 MHz
WSHX	Danville, VT	95.7 MHz

Applications Filed to Modify AM Facilities

KSRT	Orange, CA	830 kHz	Move to Orange-Huntington Bch.
WGLI	Babylon, NY	1290 kHz	Move to Mastic Beach, 500 watts

AM Facility Change Approved

WXTL	Jacksonville Bch., FL	1010 kHz	Move to Baldwin, 10 kW

Applications Filed For Changed FM Facilities

KALU	Langston, OK	90.7 MHz	Move to 89.3 MHz, 150 watts
KBNR	Brownsville, TX	88.3 MHz	Move to 88.1 MHz, 1.2 kW
KSNR	Collegeville, MN	88.9 MHz	Move to St. Joseph
WAHN	Wilson, NC	90.5 MHz	Move to Raleigh
WESE	Baldwyn, MS	95.9 MHz	Move to 92.5 MHz
WIUJ	St. Thomas, VI	88.9 MHz	Move to 102.9 MHz
WNDN-FM	Salisbury, NC	102.5 MHz	Move to 89.7 MHz

Permits Granted For New FM Stations

AL	Moulton	103.1 MHz	6 kW
AZ	Tucson	107.5 MHz	15 kW
CA	Victorville	89.5 MHz	1 kW
CT	Guilford	91.5 MHz	2 kW
FL	Five Points	106.5 MHz	3 kW
FL	Ft. Walton Bch.	96.5 MHz	98 kW
FL	Sarasota	89.1 MHz	100 kW
IA	Ankeny	106.3 MHz	3 kW
IL	Olney	88.1 MHz	133 watts
IN	Howe	89.7 MHz	10 kW
IN	La Grange	105.5 MHz	3 kW
KY	Louisville	100.5 MHz	50 kW
LA	Monroe	89.3 MHz	1 kW
LA	Reserve	94.9 MHz	2 kW
MI	Saginaw	104.5 MHz	3 kW
MO	Cuba	102.1 MHz	3 kW
MO	Ellington	103.9 MHz	3 kW
MP	Saipan	97.9 MHz	% kW
NC	Hamlet	104.3 MHz	3 kW
NH	Farmington	106.5 MHz	375 watts
NJ	Petersburg	102.7 MHz	3 kW
NM	Gallup	91.9 MHz	100 kW
NY	Kingston	91.7 MHz	335 watts
OH	Manchester	101.3 MHz	3 kW
OK	Byng	100.1 MHz	50 kW
OK	Roland	92.3 MHz	930 watts
OR	Glenedan Bch.	97.5 MHz	8 kW
SC	McClellanville	98.9 MHz	50 kW
TN	Dickson	93.7 MHz	3 kW
TN	St. Joseph	101.5 MHz	3 kW
TN	Spencer	98.7 MHz	1 kW
TX	Gregory	104.5 MHz	
VA	Gloucester	99.1 MHz	3 kW
WA	Kelso	94.5 MHz	3 kW
WI	Mosinee	94.7 MHz	50 kW

Changed FM Frequencies

KBTB	Bethel, AK	107.9 MHz to 98.3 MHz, 25 kW
KHSS	Walla Walla, WA	100.9 MHz to 100.7 MHz, 22.5 kW
KLWT-FM	Lebanon, MO	92.1 MHz to to 107.9 MHz, 50 kW
KSBH	Coushatta, LA	92.3 MHz to 94.9 MHz, 25 kW
WAIL	Key West, FL	95.5 MHz to 99.5 MHz
WELK	Elkins, WV	95.3 MHz to 94.7 MHz, 5 kW
WLOT	Trenton, NJ	97.7 MHz to 97.5 MHz
WTAO-FM	Murphysboro, IL	104.9 MHz to 105.1 MHz, 25 kW

May when it was no longer heard. A visit to the station's rented quarters, which it shared with sister station WYUT/1420 (ex-WMYI), shed no light on the situation. In fact, the lights were out, which seemed to be the result of an eviction. The landlord had no comment. Station employees couldn't be located for possible comment.

A few days prior to the closing, the landlord had obtained an $8,650 judgment against the station owners for "damages and costs." Other recent outstanding judgments against the station included $11,700 awarded to Associated Press, and $44,000 to state tax and labor agencies.

Hits The Spot: If you're in the Montreal area, you're no doubt familiar with CHTX/990 ("990 Hits"), which plays a Top 40 Dance Hit format. This station used to be CKGM/980 with 10 kW, but they went up to 50 kW when they changed to 990 kHz.

One of the air personalities at CHTX calls himself Marc Hollywood, and he's an avid DX'er. He hasn't been into the hobby all that

990
Hits
MONTREAL

Marc Hollywood is an air personality on CHTX/990, Montreal, Quebec. He sent along this decal.

IF YOU DRINK, DON'T DRIVE.

580 CKPR

CLASSIC H•I•T•S

A timely and worthwhile message appears on the bumper sticker given out by CKPR/580 in Thunder Bay, Ontario. (Courtesy Fred Lesnick, VE3FAL, Ontario.)

FM Call Letters Changes Requested

Now	Seeks	
KKMX-FM	KIDN-FM	Hayden, CO
WCVM	WCTK	Middlebury, VT
WHZZ-FM	WVHR	Huntington, TN
WJCS	WKZF	Bayboro, NC
WKJM	WEZV	Monticello, IN
WRDW-FM	WAKB	Wrens, GA
WYBH	WJAW	McConnelsville, OH

AM Call Letters Changes Requested

Now	Seeks	
KCSY	KSLD	Soldotna, AK
KKMX	KIDN	Hayden, CO
WPNT	WXRT	Chicago, IL

AM Call Letter Changes

Former	New	
KBLZ	KSRK	Lufkin, TX
KESI	KBBT	Portland, OR
KTFS	KHSP	Texarkana, TX
KZOU	KURB	Little Rock, AR
WCMG	WQZZ	Lawrenceburg, TN
WIXC	WBXR	Fayette, TN
WJAK	WHMO	Jackson, TN
WNJO	WJRZ	Seaside Park, NJ
WQKC	WZZB	Seymour, IN
WQPN	WZAO	Moundsville, IN
WZQB	WRCC	Warner Robins, GA

Changed FM Call Letters

Former	New	
KEAL	KFMK	Winton, CA
KEPC	KTLF	Colorado Spgs., CO
KMGC	KDMX	Dallas, TX
KOZN	KBZD	Imperial, CA
KQKZ	KSEA	Greenfield, CA
KSTZ	KFXB	St. Genevieve, MO
KTFS-FM	KHSP-FM	Ashdown, AR
KTLF	KEPC	Colorado Springs, CO
KUHD	KXKY	Holdenville, OK
KUUB-FM	KMMS-FM	Bozeman, MT
KVRX	KSRN	Sparks, NV
KYIZ	KIMS	Hutchinson, KS
KZOU-FM	KUXB-FM	Little Rock, AR
KZZP-FM	KVRY	Mesa, AZ
WCCK	WMXE	Erie, PA
WCMG	WQCC	Lawrenceburg, TN
WESK	WXST	Loudon, TN
WFUC	WBAA-FM	Lafayette, IN
WFYR	WWBZ	Chicago, IL
WHZZ-FM	WVHR	Huntington, TN
WJRZ	WJRZ-FM	Manahawkin, NJ
WKSG	WXCD	Mt. Clemens, MI
WLLX	WYBM	Minor Hill, TX
WMJW	WKXI	Magee, MS
WPPR	WRCC-FM	Warner Robins, GA
WRBZ	WAQZ	Milford, OH
WSNL	WFXB	E. St. Louis, IL
WSSP	WZTU	Cocoa Beach, FL
WVEH	WQEH	Easthampton, NY
WXLE	WRZR	Johnstown, OH
WXLQ	WXLZ	Lebanon, VA
WZBB	WQKC	Seymour, IN
WZLS	WVCM	Valdosta, GA

New FM Call Letters Issued

KAJO	Harbeck, OR
KBXT	Bixby, OK
KDAY	Independence, CA
KMXD	Ankeny, IA
KPXA	Sisters, OR
KPXB	Bozeman, MT
KPXD	Indian Springs, NV
KQUA	Lutesville, MO
KQUF	Raymondville, TX
KQUG	Wrightsville, AR
KQUH	Duluth, MN
KQUI	Augusta, KS
KRTK	Cleveland, TX
KXAC	St. James, MN
KYMO-FM	E. Prairie, MO
WADU-FM	Reserve, LA
WAYG	Sarasota, FL
WESV	Richton, MS
WJOR-FM	St. Joseph, TN
WLWN	Kershaw, SC
WLXY	Northport, AL
WNJS-FM	Berlink, NJ
WPTH	Olney, IL
WQHN	Spangler, PA
WSJG	Hamlet, NC
WUVE	Saginaw, MI
WVEA	Williamstown, KY
WVFA	Hartford, VT
WFVB	Celina, TN
WVFE	Coral Cove, FL
WVGF	Uniontown, AL
WVPI	Macon, GA
WXER	Plymouth, WI
WXGM-FM	Gloucester, VA
WZBR	Ebenezer, MS

long, but he's learning fast and is very enthusiastic. Marc tells us he likes *POP'COMM* because it presents information in a way that can be understood and used by beginners.

FCC Problem Line: The licensee of WREM/710, Monticello, ME was notified by the FCC of an apparent liability in the sum of $10,000 for unauthorized transfer of control to another party.

According to the FCC, WREM's owner leased the station to another party but turned over to the leasee too many of his own responsibilities, which, as licensee, he should have controlled himself. The FCC considered this "abdication of control" to the leasee.

The FCC told the licensee of 50 kW station WOKJ/1550, Jackson, MS to show cause why its license should not be revoked, and the station was issued a notice of apparent liability in the amount of $250,000. These problems arose because of FCC claims of violations relating to failure to light the stations towers, failing to respond to FCC directives, and for discontinuing operation without authorization.

In August of 1990, the FAA notified the FCC that the six WOKJ towers had not been lit during periods of darkness, and when the station was not in operation. The FAA said that the unlit towers were the result of suspension of service by the local power utility for nonpayment. The FCC determined that WOKJ had gone off the air in July without notifying the FCC, or receiving the necessary authority to do so. In December of 1990, the FCC convinced the power utility company to restore power to the tower lights on an emergency basis.

In addition to various technical violations, WOKJ's licensee also apparently violated FCC rules by not responding to FCC violation notices in the required three days. He responded in three weeks, stating that he was trying to sell the station. Two later FCC inquiries were ignored. The FCC claims that the licensee has apparently ignored all directives and inquiries about the tower lights since August of 1990, has not notified of permanent discontinuance, surrendered his license, nor requested temporary authority to remain silent.

The FCC upheld its decision not to allow the owners of Tempe, AZ stations KUKQ and KUPD-FM to renew their licenses. The station's licensees had purchased the station in 1974, but the FCC claimed that one of the persons involved in the ownership and management of these stations would not have been found to have been acceptable for that role by the FCC had the facts been known by the agency.

The FCC contended that the licensee had been deceptive when the stations were acquired, and had continued to deceive the agency in 1978 when further inquiry was made concerning the person's involvement in the station. The station's facilities have therefore now been acquired for operation by new licensees, Grimm and Clifford.

The Totals: There are now 4,987 AM broadcasters, 4,442 FM commercial broadcasters, 1,460 educational FM broadcasters, 1,853 FM translators and boosters in the USA. There are a total of 1,477 VHF/UHF TV stations, 5,108 TV translators, and 879 LPTV stations.

Another Task Force: Not all people in broadcasting are thrilled about the one of the recently formed federal task forces. Federal task forces are invariably made up of politically appointed persons, some of whom tending to be minimally qualified. In their role as members of a task force, these people are sent out to think up ways of improving certain things. They spend a lot of time and money and eventually produce a series of recommendations. Those recommendations are seldom acted upon because of a combination of factors linked to lack of funds and manpower; because the suggestions are usually so impractical and silly; and because of indifference and because bureaucracies resist change.

A recently appointed task force is trying to figure out how to establish a structure that can more efficiently operate our governmental broadcasters. In addition, it's supposed to suggest ways in which our governmental broadcasters might be improved in order to better compare with the news gathering capabilities of commercial news services around the world. Third, the task force is looking into possible ways in which governmental broadcasters and private broadcasters might become more closely tied to one another.

Some within broadcasting see some of the goals of the task resulting from the government's displeasure with news services during the war in the Gulf. For one thing, the commercial news services were pouring out information that Washington felt did not match up with its foreign policies. Governmental news didn't have information that matched up with, nor was it as competent as, commercial news services.

There are some thoughts that First Amendment rights might be somewhat trampled by the time this task force is finished, as Washington attempts to get a handle on the information disseminated by news services to broadcasters.

Indecency: The FCC has long held that broadcasters aren't permitted to send out any programming that the agency considers "indecent." This indecency ban has been in effect around the clock.

Now the U.S. Court of Appeals says that this is unconstitutional. The court told the FCC that it was going to have to establish a certain safe period when it's likely that there would be so few children in the audience that broadcasters could be allowed to send out programming the FCC considers indecent.

Probably the "safe harbor" period will be something like 2 or 3 a.m., so those who want to tune in on that type of programming will have to become night owls, or buy a tape machine.

How High The Moon? Last June, several intrepid souls climbed up the 400-ft. tower of oldies station WQQQ/96.7 MHz, Stamford, CT. When they got to the top, they planted a banner reading "Peace." When they arrived back down on ground level they were met by police who arrested them for criminal trespass.

Sounds of Silence: Atop New York City's Empire State Building, there's a wonderful FM transmitting antenna designed to be used simultaneously by many local FMcasters. One day this past summer something went awry in the antenna and no less than eleven FM stations were knocked off the air. Those that had auxiliary transmitting facilities soon got back on the air with reduced signal coverage, but some stations didn't get back on for the full six hours it took to fix the problem on top of one of the world's most famous buildings. Maybe it was King Kong.

Who Found It? In order to get an FM license in the USA, the FCC has to have the desired frequency listed as available for use in the community in question on its so-called "FM Table of Allotments."

If a person wishes to open an FM station on a certain frequency that isn't listed for a given community in the "FM Table of Allotments," they can communicate with the FCC and (more or less) state that the frequency is unused in that community and that it is their opinion that operation on that frequency, under certain power and antenna specifications, will not adversely affect other stations. At that point, the FCC will consider adding the frequency to that community in the Table.

Should the frequency eventually become allocated to that community, the person who "found" the open frequency may file for a license. Problem is, so can many others who also would like to operate on the newly allocated frequency in that community. All applicants come before the FCC on an equal basis, including the person who had originally determined that it might be made available.

Someone has now petitioned the FCC to change their rules to give preferential status to the license application filed by the person who had first suggested the frequency be allocated to a community. The FCC appears to think well of the concept at this point, and it could become a part of the regulations.

That's a 30: When the two hands of the control room clock shake hands at 12, it's time for me to collect my stuff and let someone else ride the gain. But we'll be back on the next shift, and we hope you'll join us here amidst the carts and racks of equipment. ■

WEFAX To The Max

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PC GOES/WEFAX 3.0 is a professional wefax image reception and analysis system for the IBM PC and compatibles. The product includes a demodulator that handles both AM and FM fax signals, advanced signal processing software, tutorial cassette, and complete 325 page reference manual. The software includes the following advance features:

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- Image Zoom, Scroll, Pan, Rotation
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- Time Lapse Frame Looping
- Slide Shows
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- APT Latitude & Longitude Grids

PC HF FACSIMILE 5.0 $99

PC HF Facsimile 5.0 is a complete reception system for shortwave FSK facsimile on the IBM PC and compatibles. The product includes an FSK demodulator, tutorial audio cassette, 250 page manual and signal processing software. The product includes many of the advanced features of PC GOES/WEFAX 3.0 but at a fraction of the price. Call or write for a complete catalog of products.

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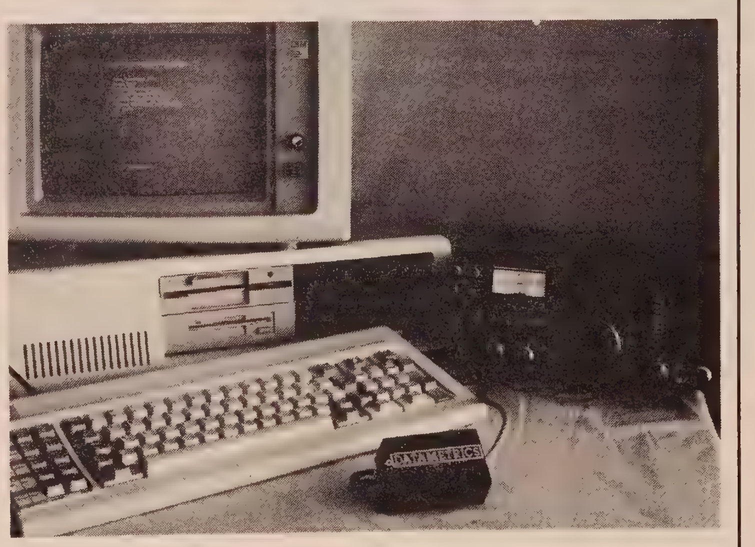
CIRCLE 19 ON READER SERVICE CARD

Computer Aided Scanning

a new dimension in communications from Datametrics



Now you can enhance your ICOM communications receiver through a powerful computer controlled system by Datametrics, the leader in Computer Aided Scanning. The system is as significant as the digital scanner was five years ago and is changing the way people think about radio communications.

- The Datametrics Communications Manager provides computer control over the ICOM R7000 or R71A receiver.
- Powerful menu driven software includes full monitoring display, digital spectrum analyzer and system editor.
- Innovative hardware design requires no internal connections.
- Comprehensive manual includes step by step instructions, screen displays, and reference information.
- Extends ICOM capabilites including autolog recording facilities, 1000 channel capacity per file, and much more.
- Overcomes ICOM limitations such as ineffective scan delay.

Datametrics, Inc

R7000 system $349
R71A system $349
Manual and demo disk $15

Requires ICOM receiver and IBM PC with 512K and serial port. The R71A version also requires an ICOM UX-14.

Send check or money order to Datametrics. Inc, 2575 South Bayshore Dr, Suite 8A, Coconut Grove, Fl 33133. 30 return priviledges apply.

CIRCLE 7 ON READER SERVICE CARD

RTTY

BY ROBERT MARGOLIS

THE EXCITING WORLD OF RADIOTELETYPE MONITORING

It appears that the same string of letters that always follows RY's and precedes encryption, as described in last May's column, is created during the synchronization of a RTTY receiving device with its host transmitter.

In that column, I mentioned coming across an encrypted transmission that was interrupted by RY's and the letter string VVMGTNCJJBH. This pattern, apparently from a U.S. Navy transmitter, was observed on several frequencies on many occasions.

A reader, responding to my question as to what causes this same pattern to reoccur, writes, "What you are most likely seeing is simply the synchronization pattern . . . in order for an encrypted message to be decrypted, the receiver timing must exactly match the transmitter, or the message will be garbled or lost.

"Furthermore, all encryption devices using 'online' send out a sync pattern whenever they need to establish or re-establish contact with another station."

I received other replies to my query, but the one above seemed to be the most plausible answer. To all who responded, many thanks.

```
TVEAW WIEVP GZQQ XSWII ILEZX RULKE NSIZO EPSYF QYZWJ XXNSZ
TVQHO NJUAO LUJHVRSOSG IEOFU ESCNX XKBBZ RNCPY CRWAR XCSAD
RWRPJ NJOWZ MJZSA STCWR ZNPZI HZNMZ WBPII LFXLG LOOMJ FJVWQ
FASGP CCSMS HDZRQ OONOV LDNOF VEYLR BRXUO OQJXY HICBT TWKYD
MOYJB JSJRF WSWDX QLOAN AYHZY YOMHT UOYUT KMQKS WFCWJ HIDMU
DTXNN YTCOZ MDVSM JFDAX SQICD UAWX UYKWJ IAEOD IDVQT SWFHF
IMWDH PIIHV TASWD NHTWJ BBDPE FLANT ZHDGU WDABO HEBATXZRHK
OMWKV TJRAW MPITG
NSJS KREJN IZIEI KEJNU KTVHU IADGK AECYP
CHXOP PXOPJ UEMLF QDIPS EWKKE NZGHE GKOSG XLKXJ BOYBU JGMXH
PAGE 4 RFTJC 0148 134
MBSNS SXWEP RKBIN KFVBW JTYCN DBQJL QIBVL PTGSN
BT
GR 578
#0148
NNNN
B
XVQ

FAAE FAAE FAAE
DE   DE  DE
6WW  6WW  6WW
LISTE DE TRAFIC DU 141900Z :
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
ZFL ZFG2:
--------
WD 7406 R 140828Z FAAE
WD08Z0FYEV1
ZFL ZFG1:
--------.WD 7408 R 14091Z FYCV
WD 7409 R 140911Z FYCV
WD 7410 R 140950Z FYCV
WD 7411 R 141105Z FYCV
ZFL ZBO :
---------
WD 7412 P 141353Z FYCV
WD 7413 R 141606Z FAAE
WD 7414 P 141600Z FAAE
WD 7415 R 141529Z FYCV
ZIC WD 7415
INT ZID SUR NAVITER CAP VERT
NIVEAU DE CHARGE ZERO
MCI COOP
NNNN
LP CZKTMKONATRMVVTFV.;;KVVVVBAHTUPO."60.,4 60/3#'0 ?;$(&)8')3,:-552'&097/"
 8
-$$322&.)&/.13;
```

6WW, the French Navy at Dakar, Senegal, is sending 5-letter groups, plaintext messages, and encryption to "FAAE" in this transmission recorded by the column editor on 135 13410 kHz at 1932 UTC, 75 baud.

RTTY Intercepts

7392.8: GXQ, Royal Army, London, England, w RYI's & foxes at 0122, 50 baud. (Harold Manthey, NY)

7646: DDH7, Pinneberg Meteo, Germany, w RYRY & coded wx at 0603, 50 baud. (Hal Bilodeau, IL)

7720.7: Un-ID in ARQ s/off of "SK" at 2200. Returned 2218, but w/o ID. (Fred Hetherington, FL)

8087: KMI, Dixon R., CA, w/a FEC tfc list at 0208. (Manthey, NY)

10404.2: "LN2A," Norwegian Telcom, w RYRY + saying it's on 11402, & giving current time UTC. Was 45 baud at 0056. (Ed.)

11060: 9VF68, Singapore, w PIAB nx relay at 0048, FEC-A/96. (Takashi Kuroda, Japan)

11103.7: Un-ID w a msg in SS ending at 0120, 75 baud, then to USB phone on 1102.5. (Hetherington, FL)

11436: NMF, USCG, Boston, MA, w s/off at 1110, 75 baud. (Hetherington, FL)

12658: CCS, Santiago Navrad, Chile, w tfc & fL grps, 75 baud at 0615. (Robert Hall, RSA)

13077.5: KPH, San Francisco R., CA, w a FEC tfc list at 1305. (Ed.)

13388: PHWR, Hickam AFB, w relay of Typhoon Walt warning issued by PGTW, the Typhoon Warning Center on Guam. Was 75 baud at 1934. (Ed.)

13399: DFZG, MFA, Belgrade, Yugoslavia, w crypto after XPXPXP, 75 baud at 1510. (Ed.)

13410: 6WW, French Navy, Dakar, Senegal, w msgs in the clear to FYCV, Arago, a ship of the French Navy, 75 baud at 1946. The Arago (A 795) is a 4 BH2 class hydrographic ship that was commissioned in 1990. Its NATO c/s is RFTJCW. (Ed.)

13524: CCS, Santiago Navrad, Chile, on nightly between 2300-0000 w plaintext wx in EE, aero wx, NTM's in SS, and 5L msgs, 100 baud. (Ed.)

13566-13568: MKD, RAF, Akrotiri, Cyprus, w RYI's & count on its FDM channels, 50 baud at 0000. (Hetherington, FL)

14397: MFA, Sofia, Bulgaria, w tfc in Bulgarian to Berne, Switzerland, 75 baud at 1125. (Ed.)

14560: HVN, Vatican City, Vatican, idling, ARQ-M2/96 at 1158 & 1610. (Ed.)

14699.8: Un-ID w RYRY + ZMSK, time & date, 50 baud at 1640. (Bilodeau, IL). It's REB24, Tass, Alma Ata, USSR. The ZMSK is actually MSK, which stands for Moska (Moscow), but Alma Ata is the site of the xmtr. (Ed.)

14747.3: "CBNFD" w msg to "CBDFA," ARQ-M2/96 at 0214. (Mathey, NY) This is the Chilean Navy—Ed.

14802: Un-ID in ARQ-E3/100 mode at 0036. (Kuroda, Japan) It's RFVI, French Mil., Le Port, Reunion—Ed.

14875: RFLI, French Navy, Fort de France, Martinique, w "controle de voie," ARQ-E3/72 at 0141. (Manthey, NY)

15751.2: CNM66, MAP, Rabat, Morocco, w nx in EE, 50 baud at 1230. (Ed.) Same sta w/a sked & freq list at 1531. (Manthey, NY)

15830: Un-ID Soviet xmsn in RR, which appeared to be personal telexes, foll by 3F grps at 0247, 50 baud. (Bilodeau, IL) It's RUZU, the Soviet wx sta at Molodezhnaya Base, Antarctica—Ed.

15845: SUA289, MENA, Cairo, Egypt, w nx in AA, 50 baud at 2230. (Hetherington, FL)

16005: CLP1, MFA, Havana, Cuba, w encryption to Managua, Nicaragua, 75 baud at 1555. (Ed.)

16010.3: CLP1 w tfc to Guyana, 50 baud at 1408. (Ed.)

16011.7: Un-ID Egyptian diplo w a msg in AA, ARQ at 1411 & 1920. (Ed.)

16014.4: CLP1, MFA, Havana, Cuba, w/a msg to its embassy in Burkina Faso, 50 baud at 2350. (Hetherington, FL)

16024.8: CLP1 w/a 5L msg to Guinea, 50 baud at 1100. (Hetherington, FL)

16136: BZR66, Xinhua, Yuryumqi, China, w nx in EE, 75 baud at 1320. Is there a relay on this circuit? (Manthey, NY)

16140: RGW28, Tass, Moscow, USSR, w nx in EE, 50 baud at 1335. (Manthey, NY)

16171.6: Un-ID Egyptian diplo idles in ARQ mode, 0022-0146, then s/off msg in AA. (Ed.)

16175.2: NNN0CNJ, the USN MARS sta aboard the USS Caron (DD-970), a "Spruance" class destroyer, w MARSgrams at 1227, ARQ. (Ed.)

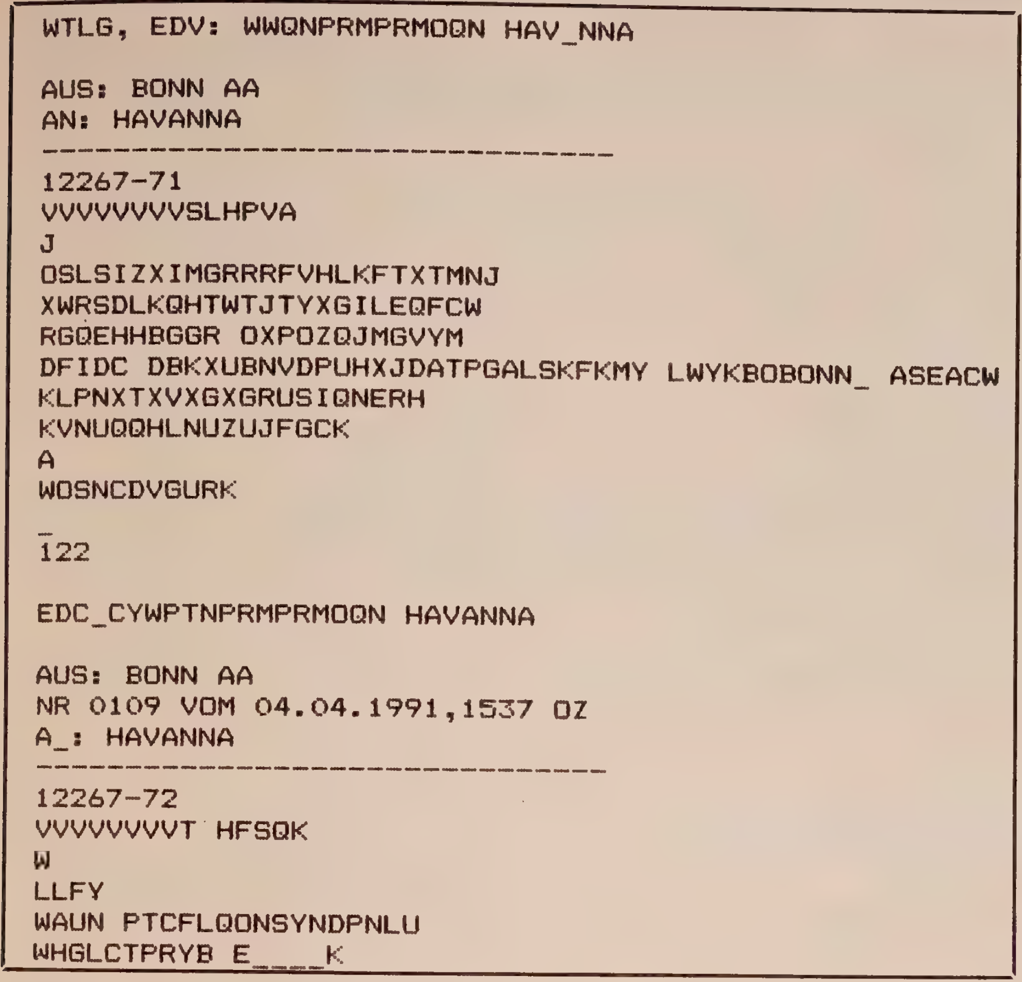
16183: Un-ID meteo sta w coded wx for Africa, 50 baud at 1302. (Ed.)

16202: STK, Khartoum Aero, Sudan, w aero wx, 50 baud at 0205. (Ed.)

16228: "L9C," French Embassy, Buenos Aires, Argentina, w RYRY & 10 count, foll by 5L msgs to "P6Z," MFA, Paris, France. Was FEC-A/192 art 2243. (Ed.)

16239.2: "DKI," un-ID Embassy in Havana, Cuba, w op tfc chatter at 2018, 75 baud. (Hetherington, FL) "DKI" is the Bulgarian Embassy in Havana—Ed.

16324.8: RFTJD, French Navy, Libreville, Gabon, w "controle de voie," ARQ-E3/48 at 0154. (Ed.)



```
WTLG, EDV: WWQNPRMPRMOQN HAV_NNA

AUS: BONN AA
AN: HAVANNA
---------------------------------
12267-71
VVVVVVVVSLHPVA
J
OSLSIZXIMGRRRFVHLKFTXTMNJ
XWRSDLKQHTWTJTYXGILEQFCW
RGQEHHBGGR OXPOZQJMGVYM
DFIDC DBKXUBNVDPUHXJDATPGALSKFKMY LWYKBOBONN_ ASEACW
KLPNXTXVXGXGRUSIQNERH
KVNUQQHLNUZUJFGCK
A
WOSNCDVGURK

_
122

EDC_CYWPTNPRMPRMOQN HAVANNA

AUS: BONN AA
NR 0109 VOM 04.04.1991,1537 OZ
A_: HAVANNA
--------------------------------
12267-72
VVVVVVVVT HFSQK
W
LLFY
WAUN PTCFLQONSYNDPNLU
WHGLCTPRYB E____K
```

Short encrypted notes were sent by MFA, Bonn, Germany, to its embassy in Havana, Cuba. Recorded by the column editor on 15856.7 kHz at 1412, ARQ-E/96.

16334: FZS63, Belair Meteo, Reunion, w coded wx, 75 baud at 1226. This sta also had a FAX wx bc at 1143. (Ed.)

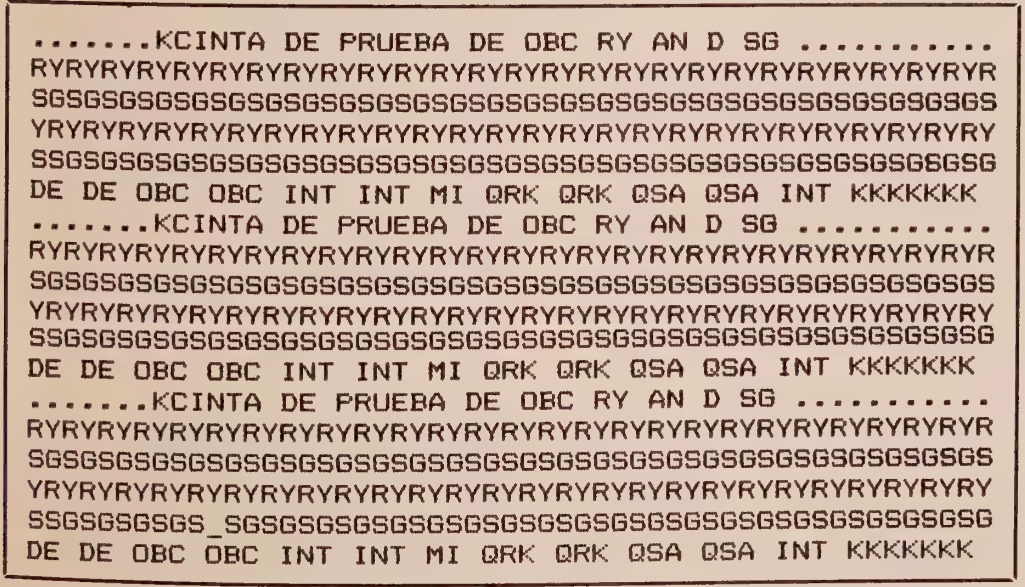
16681.5: YWMI, Maracaibo Navrad, Venezuela, relaying wx data from "T-44" to "CGA," 75 baud at 0200. "T-44" is the hull number of the Puerto Cabello, a logistic support ship in the Venezuelan Navy. The ship was commissioned in 1972 as refrigerated cargo ship, and was commissioned into the Venezuelan Navy in 1986. (Ed.)

17108.3: FUF, French Navy, Fort de France, Martinique, w RYRY & SGSG to "FAAN," 75 baud at 1349. At 1358, announces "hotel alfa 1400z" and enters crypto mode at 1400. (Ed.)

17203: NRV, USCG, Barrigada, Guam, w wx in FEC at 1400. (Kuroda, Japan)

17206.5: ZSC, Cape Town R., RSA, w navareas, FEC at 0920. (Hall, RSA)

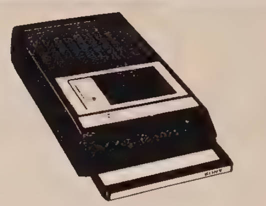
17271: Un-ID w coded (?) msg in ARQ at 1200. Does "yfasy faj" mean something? (Hall, RSA) Might be AA—Ed.



```
.......KCINTA DE PRUEBA DE OBC RY AN D SG ...........
RYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYR
SGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGS
YRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRY
SSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSG
DE DE OBC OBC INT INT MI QRK QRK QSA QSA INT KKKKKKK
.......KCINTA DE PRUEBA DE OBC RY AN D SG ...........
RYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYR
SGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGS
YRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRY
SSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSG
DE DE OBC OBC INT INT MI QRK QRK QSA QSA INT KKKKKKK
.......KCINTA DE PRUEBA DE OBC RY AN D SG ...........
RYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYR
SGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGS
YRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRY
SSGSGSGSGS_SGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSG
DE DE OBC OBC INT INT MI QRK QRK QSA QSA INT KKKKKKK
```

OBC, Callo Callao Navrad, Peru, sent this test tape at 1608 UTC on 21858 kHz, 75 baud. (Logged by Robert Margolis)

12 HOUR RECORDER



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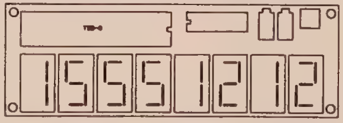

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```
F A A N  D E  F U F
F A A N  D E  F U F
VV T E S T I N G
VV T E S T I N G
RYRYRYRYRYRYRYRYRYRY
SGSGSGSGSGSGSGSGSG
NNNN
F A A N  D E  F U F
F A A N  D E  F U F
VV T E S T I N G
VV T E S T I N G
RYRYRYRYRYRYRYRYRYRY
SGSGSGSGSGSGSGSGSG
NNNN
F A A N  D E  F U F
F A A N  D E  F U F
VV T E S T I N G
VV T E S T I N G
RYRYRYRYRYRYRYRYRYRY
SGSGSGSGSGSGSGSGSG
NNNN
F A A N  D E  F U F
F A A N  D E  F U F
VV T E S T I N G
VV T E S T I N G
RYRYRYRYRYRYRYRYRYRY
SGSGSGSGSGSGSGSGSG
NNNN
H O T E L  A L F A 1400Z
H O T E L  A L F A 1400Z
H O T E L  A L F A 1400Z
```

FUF, French Navy, Fort de France, Martinique, announces "hotel alfa" after running a test tape for a couple a minutes. Logged by the column editor on 17108.3 kHz at 1349 UTC, 75 baud. At 1400, "hotel alfa" was announced again, followed by encrypted text.

```
RYRYRYRYRYRYRYRYRYRYR
RYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYR
SI ME COPIA SOLAMENTE DIGA  PROCEDA
CGA DE T-44
CGA T
NR
CCCC
R-171750Q MAY 91
OFL NR 0498
DE T-44
PARA DHNME
INFO DPCOP
GR SC (NC)
BT.-
BBXX 17224 99250 70797 41598 31712 10290 40180
70000 83100 22232 20801.-
BT.-
HD------172020Q
NNNN
CGA DE T-44
CGA T
NR
CCCC
R-171750Q MAY 91
OFL NR 0498
DE T-44
PARA DHNME
INFO DPCOP
GR SC (NC)
BT.-
BBXX 17224 99250 70797 41598 31712 10290 40180
70000 83100 22232 20801.-
BT.-
HD------172020Q
NNNN
INT QSL DE MIRAD
```

"T-44" is the hull number of the Puerto Cabello, a Venezuelan Navy logistic support ship. In this brief transmission, "mirad," is probably YWM1, Maracaibo Navrad, Venezuela, relaying a weather report from the ship. The transmission was intercepted by the column editor on 16681.5 kHz at 0200 UTC, 75 baud.

17385: Un-ID w encryption, ARQ-E/192 at 1256. (Ed.)

17470: BZS28, Xinhua, Yuryumqi, China, w its nx bc in EE ending at 1220, 50 baud. (Hetherington, FL)

17474: RPFN, Monsanto Navrad, Portugal, w RYRYRY & foxes at 1505, 75 baud. (Manthey, NY)

Abbreviations Used In The RTTY Column

AA	Arabic
ARQ	SITOR mode
BC	Broadcast
EE	English
FEC	Forward Error Connection mode
FF	French
foxes	"Quick brown fox . . . "test tape
GG	German
ID	Identification/ied
MFA	Ministry of Foreign Affairs
nx	News
PP	Portuguese
RYRY	"RYRY . . . "test tape
SS	Spanish
tfc	Traffic
w/	With
wx	Weather

18029: PTT, Lubumbashi, Zaire, w tfc in FF, 50 baud at 1300. (Hall, RSA)

18055.3: CME405, Havana, Cuba, w DFZG QTC RYRY, foll by a list of world cities. Was 75 baud at ??? (Manthey, NY) Not Havana, Harold, but MFA, Belgrade, Yugoslavia, which uses the DFZG ID. Your logging of ATA, Tirana, Albania, w nx, 75 baud at 1636, on 18-55, was also from Belgrade. The language was Serbo Croat, not Albanian—Ed.

18050: RED30 (?), Tass, Moscow, w nx in FF at 1235, 50 baud. (Hetherington, FL) No, Fred. The c/s here in RQV70—Ed.

18105: Un-ID w garbled tfc in FF, ARQ at 1308. (Hall, RSA) It might've been an amateur radio sta. Freqs from 18068 to 18168 are allocated for use by amateur radio stas. (Ed.)

18217.2: Un-ID w/a msg in SS & RYRY, AUTO-SPEC/68 at 1308. (Ed Deasy, VA)

18264: XVN48, VNA, Hanoi, Vietnam, w nx in EE at 0730, 50 baud. (Hall, RSA)

18311.9: CLP1, MFA, Havana, Cuba, w a 5L msg to Ghana, 50 baud at 1530. (Hetherington, FL)

18385: RRQ20, Tass, Alma Ata, USSR, w nx in EE, 50 baud at 1400. (Manthey, NY)

18388: ETR38, Addis Ababa, Ethiopia, w RYRY, 50 baud at 1605. (Manthey, NY)

18450.4: Un-ID w 5L grps & RYRY, ARQ-90/200 at 1620. (Deasy, VA) Reminds me of French diplo xmsns—Ed.

18503.7: FUF, French Navy, Fort de France, Martinique, relaying tfc from Paris to Bogota, Caracas, and Mexico City. Was ARQ-E3/192 at 2038. (Ed.)

18514: Un-ID w foxes & 10 count, 75 baud at 2213. (Ed.)

19109: Un-ID in ARQ at 2035. (Kuroda, Japan) My logbook shows MFS, Jakarta, Indonesia, using ARQ here—Ed.

19127: RMC21, Tass, Moscow, w nx in FF, 50 baud at 1455. (Manthey, NY)

19173: CNM85, MAP, Rabat, Morocco, w RYRY, foll by nx in FF, 50 baud at 1734. (Paul Scalzo, PQ)

19204.7: FUF, French Navy, Fort de France, Martinique, w "controle de voie," ARQ-E3/100 at 1734. (Ed.)

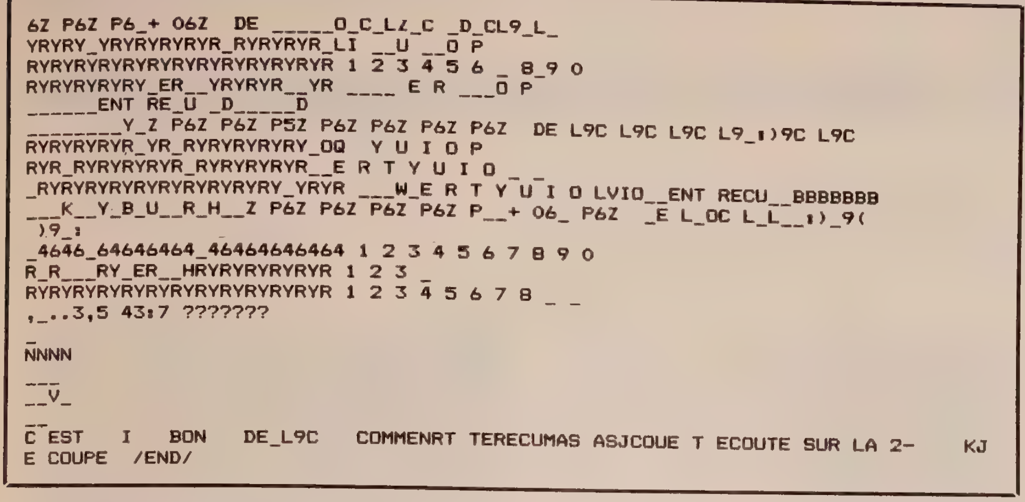
19296.6: RFQP, French Navy, Djibouti, w "controle de voie," ARQ-E3/100 at 0642. (Kuroda, Japan)

19386.7: RFQP w "controle de voie," ARQ-M2/200 at 0650. (Kuroda, Japan)

19440: LOR, Puerto Belgrano Navrad, Argentina, w 5L msgs, 75 baud at 1203. (Ed.)

19756.7: MFA, Jakarta, Indonesia, w/a msg in Indonesian, SI-ARQ/96 at 2211. (Kuroda, Japan)

19827: Un-ID idling at 2144, ARQ6-90/200. (Kuroda, Japan) This might be a French diplo channel—Ed.

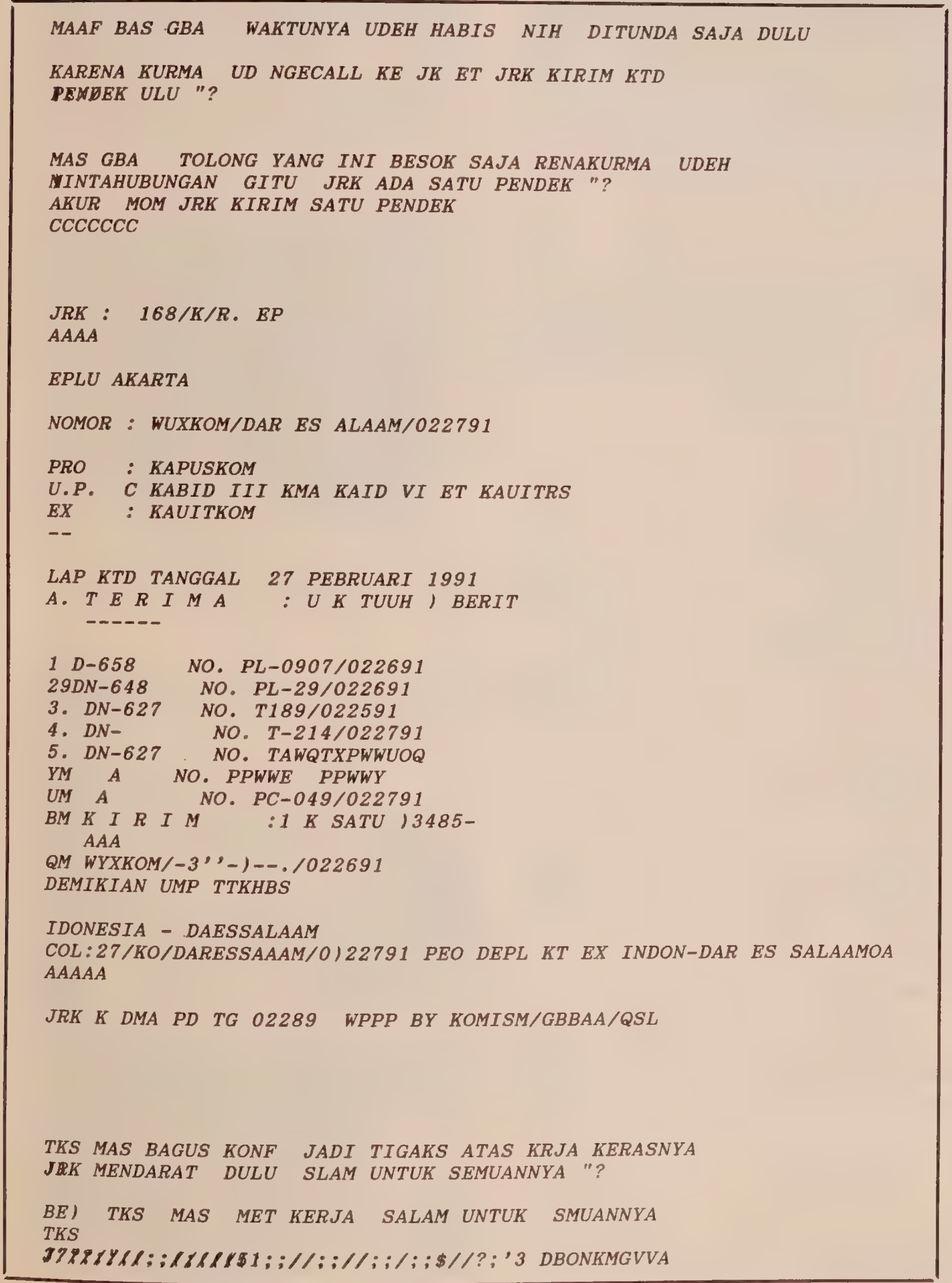


```
6Z P6Z P6_+ 06Z  DE _____O_C_LZ_C _D_CL9_L_
YRYRY_YRYRYRYRYR_RYRYRYR_LI __U __O P
RYRYRYRYRYRYRYRYRYRYRYRYRYR 1 2 3 4 5 6 _ 8_9 0
RYRYRYRYRY_ER__YRYRYR__YR ____ E R ___O P
______ENT RE_U _D_____D
________Y_Z P6Z P6Z P5Z P6Z P6Z P6Z P6Z  DE L9C L9C L9C L9_:)9C L9C
RYRYRYRYR_YR_RYRYRYRYRY_OQ  Y U I O P
RYR_RYRYRYRYR_RYRYRYRYR__E R T Y U I O _ _
_RYRYRYRYRYRYRYRYRYRYRY_YRYR ___W_E R T Y U I O LVIO__ENT RECU__BBBBBBB
___K__Y_B_U__R_H__Z P6Z P6Z P6Z P6Z P__+ 06_ P6Z  _E L_OC L_L__:)_9(
 )9_:
_4646_64646464_46464646464 1 2 3 4 5 6 7 8 9 0
R_R___RY_ER__HRYRYRYRYRYR 1 2 3 _
RYRYRYRYRYRYRYRYRYRYRYRYRYR 1 2 3 4 5 6 7 8 _ _
,_..3,5 43:7 ???????
_
NNNN

___
__V_

__
C EST   I   BON   DE_L9C   COMMENRT TERECUMAS ASJCOUE T ECOUTE SUR LA 2-    KJ
E COUPE  /END/
```

Test transmission from "L9C," the French Embassy in Buenos Aires, Argentina, to "P6Z," MFA, Paris, France, was logged by the column editor on 16228 kHz, 2243-2244, FEC-A/192.



```
MAAF BAS GBA   WAKTUNYA UDEH HABIS  NIH  DITUNDA SAJA DULU

KARENA KURMA  UD NGECALL KE JK ET JRK KIRIM KTD
PENDEK ULU "?


MAS GBA   TOLONG YANG INI BESOK SAJA RENAKURMA  UDEH
MINTAHUBUNGAN  GITU  JRK ADA SATU PENDEK "?
AKUR  MOM JRK KIRIM SATU PENDEK
CCCCCCC




JRK :  168/K/R. EP
AAAA

EPLU AKARTA

NOMOR : WUXKOM/DAR ES ALAAM/022791

PRO    : KAPUSKOM
U.P.  C KABID III KMA KAID VI ET KAUITRS
EX     : KAUITKOM
--

LAP KTD TANGGAL  27 PEBRUARI 1991
A. T E R I M A     : U K TUUH ) BERIT
   ------

1 D-658     NO. PL-0907/022691
29DN-648     NO. PL-29/022691
3. DN-627    NO. T189/022591
4. DN-        NO. T-214/022791
5. DN-627     NO. TAWQTXPWWUOQ
YM   A     NO. PPWWE  PPWWY
UM  A        NO. PC-049/022791
BM K I R I M      :1 K SATU )3485-
   AAA
QM WYXKOM/-3''-)--./022691
DEMIKIAN UMP TTKHBS

IDONESIA - DAESSALAAM
COL:27/KO/DARESSAAAM/0)22791 PEO DEPL KT EX INDON-DAR ES SALAAMOA
AAAAA

JRK K DMA PD TG 02289  WPPP BY KOMISM/GBBAA/QSL




TKS MAS BAGUS KONF  JADI TIGAKS ATAS KRJA KERASNYA
JRK MENDARAT  DULU  SLAM UNTUK SEMUANNYA "?

BE)  TKS  MAS  MET KERJA  SALAM UNTUK  SMUANNYA
TKS
77%%Y//;;////$1;;//;;//;;/;;$//?;'3 DBONKMGVVA
```

Transmission of MFA, Jakarta, Indonesia, to its embassy in Dar-es-Salaam, Tanzania, was logged by the column editor in the ARQ mode on 20396.5 kHz at 1228 UTC.

19847.2: RWZ74, Tass, Moscow, USSR, w nx in EE, 50 baud at 1748. (Ed.)

19860: LOL, Buenos Aires Navrad, Argentina, w RYRY & SGSG, + msgs to OBC, 75 baud at 1936. (Ed.)

19868: Un-ID w nx in II at 1734, 50 baud. (Scalzo, PQ) Sure wish you could've gotten an ID. I'm unaware of any nx agency running 50-baud nx in II at present—Ed.

19951.5: Un-ID w brief msgs in AA, ARQ, 1823-1830. (Ed.)

19980.4: 9BC33, IRNA, Teheran, Iran, w nx in EE, 50 baud at 1635. (Hall, RSA)

20005.4: Un-ID w ARQ tfc in AA at 1148. (Deasy, VA)

20022.3: DGU20H3, PIAB, Bonn, Germany, w nx in GG at 1412, FEC-A/96. (Deasy, VA)

20176.7: Un-ID w op chatter possibly in EE, ARQ-N/96 at 1304. (Deasy, VA)

20177.4: IPG20, MFA, Rome, Italy, w 5L msgs & a msg in II, ARQ at 1514. (Ed.)

20181.5: Un-ID w a msg in AA, ARQ at 1832. (Deasy, VA)

20404: YWM1, Maracaibo Navrad, Venezuela, w msgs in SS at 20076, 75 baud. (Scalzo, PA)

20469: Un-ID w coded wx, foll by info on APT from polar orbiting satellites, & xmsn freqs, 50 baud at 0024. This was foll by a fax chart that was too weak to copy. (Bilodeau, IL) Tis AXM37, Canberra Meteo, Australia—Ed.

20609.4: HBD20, MFA, Berne, Switzerland, w 5L msgs at 1600, ARQ. (Ed.)

20622: 5KM, Bogota Navrad, Colombia, w RYRY to LOL, 75 baud at 1925. (Manthey, NY)

20733: "GMN," w RYRY at 1746, foll quickly by QRU SK. No coded msg sent. Was 50 baud. (Ed.)

20734: 4UZ, UN, Geneva, Switzerland, w tfc to UNHCR, Kinshasa, Zaire, ARQ at 1158. (Hall, RSA)

20792: PWX33, Brasilia Navrad, Brazil, w RYRY to RPFN, 75 baud at 0100. (Hetherington, FL)

20807.8: Un-ID in ARQ-E3/96 mode. (Kuroda, Japan) No time given. This freq is used by RFGP, French Navy, Djibouti—Ed.

20880.8: CLP1, MFA, Havana, Cuba, w 5L grps to Burkina Faso, 50 baud at 1245. (Hetherington, FL)

21823.5: Spanish Emb., Managua, Nicaragua, w msgs & telegrams, ARQ at 1557. (Ed.)

21858: Un-ID Swedish diplo w msgs in Swedish at 1300, 1755 & 1847, SWED-ARQ; and OBC, Callao Navrad, Peru, w msgs at 1556, 75 baud, & RYRY/SGSG to LOL at 1938. (Ed.)

21860: MFA, Sofia, Bulgaria, w nx in Bulgarian at 1535, 75 baud. (Ed.)

21862: OBC, Callao Navrad, Peru, w RYRY & SGSG + tfc to NBA, 75 baud at 1517. (Ed.)

21925: Un-ID French diplo ends xmsn at 1337 w "203 79 QRU 70 QRO," ARQ6-90/200. (Ed.)

22880: Possibly Tanjug, Belgrade, Yugoslavia, w nx & interviews in SC, 75 baud at 1507. Several items had the Tanjug logo in the heading. (Bilodeau, IL) This was DFZG, MFA, Belgrade, xmtng Tanjug stories to diplo posts. Tanjug xmits at 50 baud, while the MFA uses 75 baud—Ed.

22912.7: RFVI, French Navy, Le Port, Reunion, w "controle de voie" at 2155, ARQ-E3/100. (Kuroda, Japan)

23054: CLP45, Cuban Embassy, Luanda, Angola, w RYRY & crypto, 100 baud at 1713. (Scalzo, PQ)

23408: Un-ID w encryption at 2158, ARQ-E/192. (Kuroda, Japan)

23432: HDN, Quito Navrad, Ecuador, w tfc to PWX33 at 1250, 75 baud. (Hetherington, FL)

23505.8: SAM, MFA, Stockholm, Sweden, w tfc in Swedish to several embassies at 1240, SWED-ARQ. (Hetherington, FLO)

23590: 6WW, French Navy, Dakar, Senegal, w msgs to "FAAE," 75 baud at 1900. (Hetherington, FL)

23992: ZRH86, Cape Town Navrad, RSA, w RYRY, foxes & 10 count to CCM, 50 baud at 1400. (Hetherington, FL)

24102: DFZG, MFA, Belgrade, Yugoslavia, w diplo msgs & nx in SC, 75 baud at 1600. (Manthey, NY)

24790: ISX24, ANSA, Rome, Italy, w nx in FF at 1620, 50 baud. (Manthey, NY)

24856.5: MKD, RAF, Akrotiri, Cyprus, w RYI's & foxes, FDM 50 baud at 1630. (Manthey, NY)

25437: OXZ, Lyngby R., Denmark, w FEC tfc at 1638. (Manthey, NY)

26599.8: Un-ID w a msg in Polish, ARQ at 1655. (Deasy, VA) ■

EMERGENCY

COMMUNICATIONS FOR SURVIVAL

BY GORDON WEST, WB6NOA

Mobile 12-Volt Wiring

Don't take a chance on an electrical fire in your mobile or emergency command post caused by haphazard 12-volt wiring. A #14 red, 12-volt, positive wire, shorted to ground, will give off harmful smoke in less than 200 milliseconds. At 500 milliseconds, the outside plasticized insulation bursts into flames. In less than 1 second, that shorted-out, 12-volt, positive wire—even a small #14 wire—begins to burn. If the flames don't destroy your mobile unit, the smoke might kill everyone onboard.

When your emergency command post was originally put together, chances are your 12-volt wiring harnesses looked professional, and were properly fused. Ideally, the 12-volt harness that feeds all of your radio equipment is double-fused—a pair of fuses on the red and black wires where they terminate to the electrical panel by your radio equipment, and another pair of series red-and-black-wire fuses right at the voltage distribution point for the harness. This might be the battery, or better yet, a battery selector switch.

The problem with wiring directly off of a storage battery for an accessory 12-volt source is corrosion at the battery posts. Many times this corrosion will build up to the point where it literally eats away your 12-volt positive or negative harness wire.

If the 12-volt positive wire goes, everything goes dead at your radio console. But if the 12-volt negative wire gets eaten up by battery acid at the battery post, you might not notice the difference—after all, your radio equipment is also grounded to the frame of the vehicle, and this ultimately completes the other half of your 12-volt negative circuit. But, this can be extremely dangerous if you should operate a piece of auxiliary equipment, such as a power winch, because now you have high amounts of current flowing through the ground side of all of your radio gear, and pulling 50 amps at 12 volts DC through a radio chassis could easily lead to a fire. This is why fusing the 12-volt negative lead is just as important as the 12-volt positive lead in all of your radio sets.

The well-planned emergency command post or mobile unit electrical distribution system should start out with a battery selector switch. The switch should feature an alternator field disconnect circuit. This interrupts the alternator field when the switch is turned to off. This also allows you to switch between different batteries when the engine is running, with no damage to the alternator or the equally devastating problem of pumping raw AC alternator output directly into your sensitive radio equipment. The good battery selector switch is rated to 250 amps continuous current, and the 350 amp continuous—600 amp momentary selector switch—may be called for.

WINDLASS
CONTROL/PROTECTION
WINDLASS
CONTROL/PROTECTION
POWER

The power windless requires a separate circuit breaker other than the 20 amp breakers on the panel.

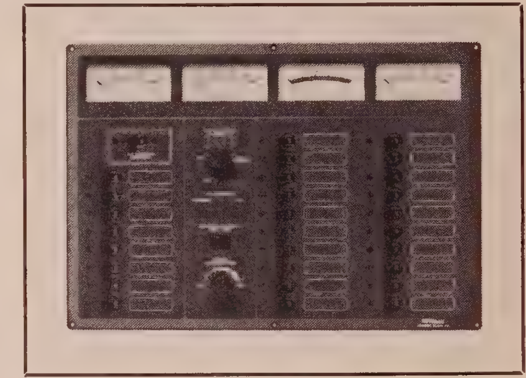
NAV START GUARD

This device "floats" your radio equipment to prevent a memory dump during engine cranking.

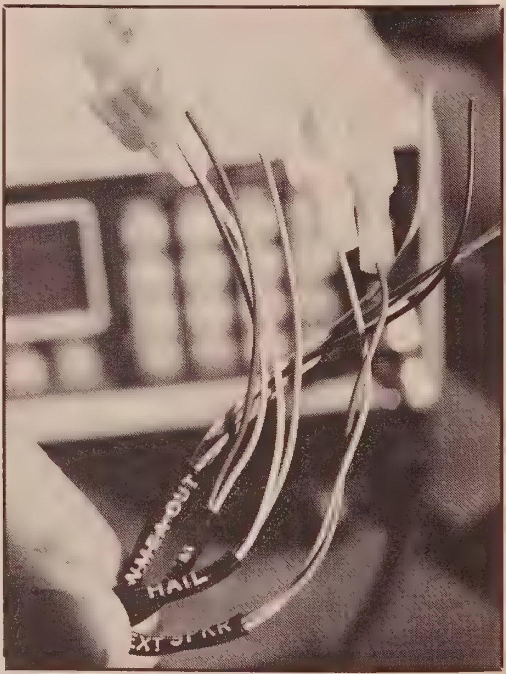
A battery isolator is also needed when you run more than a single battery in your mobile emergency command post. The battery isolator is a solid-state device that will charge both batteries at the same time when the engine is running, plus simultaneously protect a healthy battery from discharging into an older battery when the engine is shut down. This means you can run your radio gear all the way down, but still have a fresh battery to start up your command post engine, and begin the recharging process.

Another item going into the professional emergency mobile command post's electrical system is the 12-volt DC voltage spike protector. This device protects the memory in your sensitive VHF, UHF, and scanner radio sets. It also protects the memory on any Loran or global positioning system navigation receivers you may also have in your mobile command unit.

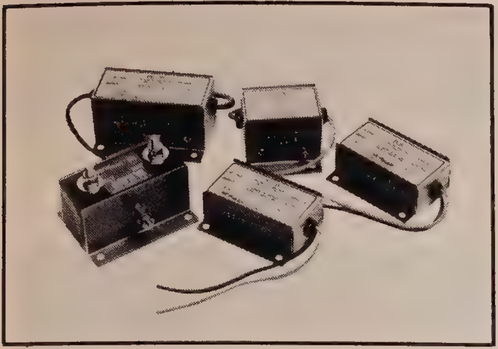
An excellent unit is available from Newmar (Newport Beach, California; phone 714/751-0488 for your nearest dealer) called the "NAV-START GUARD". This voltage protection device features a built-in sealed battery which acts as a power reservoir during engine cranking. This keeps your radio gear from dropping memory or scrambling channels when you're cranking over the engine. The internal battery supplements your regular vehicle's 12 volts during engine cranking, and eliminates voltage



Super-panel for the "ultimate" emergency command post voltage distribution system.



All wires are tagged before going onto the instrument distribution panel.



Alternator filters and battery isolators are always a good idea for your electrical installation.

spikes and brown-outs from crashing your computerized gear.

Your electrical system should be run off a voltage distribution panel. The panel will feature volt meters and amp meters to allow you to constantly watch your battery and charging sources. The voltage distribution panel will feature trip-switches that double as circuit breakers, and allow you to selectively turn on and off different operating stations. You can put in any ampere switch of your choice—10 amps for small radios, 20 amps for big HF transceivers, and you might want to get a couple of 50-amp switches to energize power inverters, pumps, and other small motors. You should also lay out your circuit breakers in a logical manner. For instance, line up all of the circuit breakers in a row that might control equipment in the back of your mobile unit. Next, set up a row of circuit breakers for non-radio gear, such as your lighting equipment and voltage inverters. You then might have a row of circuit breakers to energize 12-volt DC plug receptacles on the outside of the unit for running external radio equipment. Everything should be well-labeled, and this allows you to snap on and off any area for 12-volt operation.

The circuit breakers are attached by wires with round or spaded lugs soldered on the end. I recommend soldering over crimping because crimping small wires will, many times, lead to fractures in the individual strands. A good soldering job will allow for a low resistance connection, and the solder won't melt down even though you might be pulling as much as 50 amps through this particular lug.

Another problem with simply crimping a lug onto a wire is that if you don't crimp tight enough, the wire pulls out, and could short.

The size of the wires leading to the panel is also an important consideration. I see many panels fed with #4 or #2 wires—one red for battery positive, and one black for battery negative—and these wires are about the size of your little finger, and this will eliminate significant voltage drops. But make absolutely sure you fuse the voltage-source end of these wires so that they don't act like welding cables in case something gets shorted out at the other end of the circuit.

As you run your wires from the electrical panel to your individual radio operating stations, you can drop down in size to a pair o #8 or #10 wires which will work most 25-watt and 45-watt transceivers nicely. It's always a good idea to run some extra pairs, just in case you want to add additional radio equipment at a later date, and have their own individual circuit breakers. If each radio set has its own individual circuit breaker, you will minimize on voltage drops, and maximize your protection against a devastating short circuit.

When you are back there behind all of that radio equipment, label the different wires so you know what you are working with at a later date. If every wire has its own individual label, it makes re-wiring a cinch.

Finally, regularly inspect your emergency command post wiring, and make sure that no one else has tapped onto existing wires trying to "Mickey Mouse" in a new radio set without going all the way to the voltage distribution source. Sanitary wiring will decrease brown-outs, and allow your radio equipment to continue to function even though the main battery system might be running a little bit on reserve between charges. Good wiring will also minimize the interaction between different radio sets, and when everything is bunched in there so closely, you need as much isolation as possible.

What does the back of *your* electrical panel look like? ■

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LISTENING POST

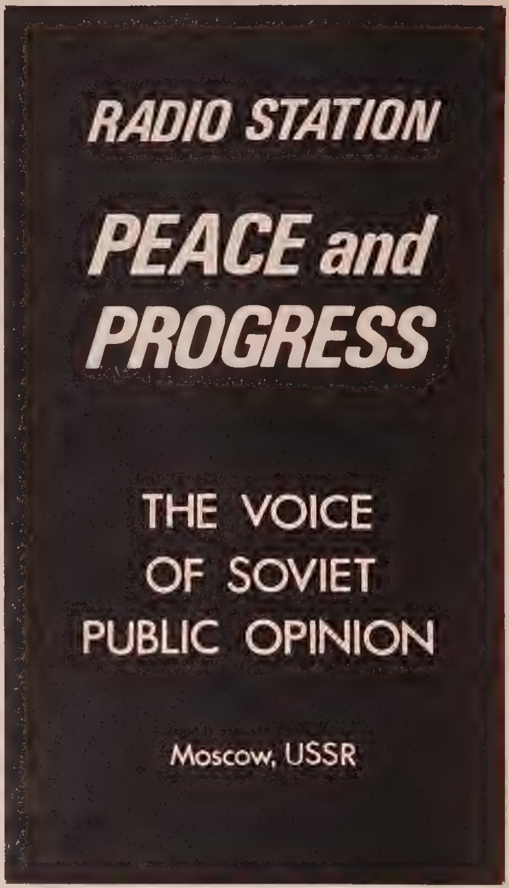
BY GERRY L. DEXTER

WHAT'S HAPPENING: INTERNATIONAL SHORTWAVE BROADCASTING BANDS

The shortwave "newswire" has been carrying a steady stream of jaw-dropping news lately, much of it bad. This month is no exception.

Complete details are not yet available here but the word is that budget problems are forcing serious cutbacks at Kol Israel—the Voice of Israel. The cutbacks may already have come about, in the form of a serious reduction or even elimination of the English broadcasts to North America. Overall, Kol Israel's broadcasts may well be only half of what they were, worldwide. As listeners, our power to prevent such cutbacks or to get them restored is limited to cards, letters, faxes, phone calls and in the number of such complaints received by those responsible for taking such actions. You can write to Kol Israel at PO Box 1082, 91010, Jerusalem, Israel.

When the USSR (now the Union of Soviet *Sovereign* Republics) starts making cuts in its propaganda machine—in this case its shortwave services—you know you can really believe all the stories about the dire situation in that country. Radio Moscow has made some cuts in recent months, but those have been nothing compared to what happened to Radio Peace and Progress. It was closed down entirely in mid-year. Peace and Progress, the "Voice of Soviet Public Opinion," ran an extensive schedule in a number of languages and operated on a large number of frequencies. The station began operation in 1964.



RADIO STATION

PEACE and PROGRESS

THE VOICE
OF SOVIET
PUBLIC OPINION

Moscow, USSR

The USSR's Radio Station Peace and Progress, operating since 1964 as the "Voice of Soviet Pubic Opinion" is no more.

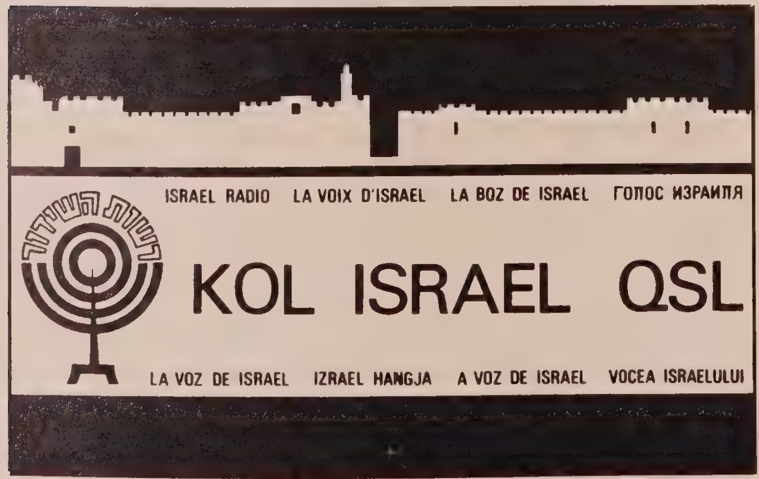
Cutbacks have even struck at Radio Tirana, Albania. That station recently dropped its broadcasts in Indonesian and Swedish, along with its Spanish and Portuguese services to Latin America.

On the positive side it appears there is some chance that Belgium will continue to have a French language service on shortwave. For the time being, at least, BRT is airing some French, relaying the domestic Radio One network. This is currently scheduled at 0500-0630 on 7140 and 17680, 1100-1130 on 9925 and 25645 and 1600-1715 on 15540 and 17675. The former RTBF facility may eventually be taken over by a new station which would be called Radio Five. It would be operated by the International Council of French Language Radio and TV Stations (CIRTEF). The station would air commercials and rent some time out for use by other stations as a relay site. We won't know whether this all comes to pass until sometime next year.

Watch for the new Costa Rica relay of Spanish National Radio to come on the air pretty soon. The facility is reported near completion and a start-up date is currently planned for sometime in January. The Costa Rican government will have some airtime on the facility, too. The three, 100 kW transmitters are located at Caiari, Costa Rica.

1997 is the year the British hands over Hong Kong to the Chinese government. The BBC has decided it will close its Hong Kong relay base then since Beijing will not guarantee the facility's operational freedom. The BBC is reported to be looking at Thailand as a possible replacement site.

RAI (Radiotelevision Italiana) is looking at some internal reorganization. A recent edition of RAI's listener magazine notes that it is committed to the use of shortwave as a link to Italians abroad. The station's transmitting plant at Prato Smeraldo is reported to be in poor condition, causing degraded reception in many parts of the world. Back in 1985, RAI had plans to upgrade the facility with a pair of 500 kW transmitters but the old money bugaboo put an end to that. RAI's Department for Programs Abroad (DPA) is being reorganized with the aim of allowing more news and program flexibility. Some languages may be dropped, others added. Ah, but will this mean no more of the "dead lady" who often reads the news in the North American service?



Kol Israel has been hit with drastic cutbacks in its services due to budget restraints.

Belt-tightening has forced the dropping of several language services at Radio Tirana.

VOICE OF TURKEY
DIE STIMME DER TÜRKEI
LA VOIX DE LA TURQUIE
TRT
V O T

Here's one of several colorful QSL cards sent out by the Voice of Turkey.

We had the pleasure of meeting Peter Barr last spring. Peter listens on an R-5000 at his Des Plaines, Illinois shack and we're looking forward to having his logs in this column.

Radio For Peace International is asking its listeners and supporters for contributions to "upgrade the station at a bare bones level and strengthen our signal . . ." RFPI had to build a new transmitter building and a new studio/office building after the Costa Rican earthquake. Money that had been designated for a new 20 kW transmitter had to go to these construction projects instead. RFPI says a new transmitter would allow it to operate on four frequencies simultaneously. You can write to RFPI at PO Box 10869, Eugene, Oregon 97448.

The shortwave service of the Christian Science Monitor now features a stronger news content in the first half hour of its Monday-Friday broadcasts. The station says general features programming now appears mostly in the third half hour, under the title "Monitor Radio Worldwide."

These days it seems as if most of the Colombian shortwave stations are operated by the Caracol network. Listed are 4755-Bogota (often inactive), 4845-Bucaramanga (also often inactive), 4945-Neiva, 5075 and 5095-Bogota (inactive), 6075-Bogota, 6105-Medellin (inactive) and 6150-Neiva.

MAIL: Jerry Martin of Salem, Oregon says he borrowed several copies of *POP' COMM*, dusted off an old logbook last used in 1977, spent his tax return on a shortwave radio and is now back to listening. Welcome, Jerry. We appreciate your reports.

It looks as though Thornton Jacobs of Rogers, Arkansas is another returnee. He says he's been an on and off listener since about 1960 and got started again last February. He really appreciates digital frequency readout. Don't we all, Thornton! We hope both you and Jerry will be regular contributors.

Kevin Story of Midland, Texas says he's thrilled with a recent QSL he got from Radio Malaysia at Kuching, Sarawak. Good going, Kevin. You are certainly very persistent in your QSL'ing efforts and this one sure qualifies as a top notch addition to your collection.

Larry Zamora, formerly of North Dakota, is now situated in Highland, California. His job requires a lot of travel but he still listens and reports when time allows. Larry noticed the much stronger signals out of the Pacific right away and he says it's a "nice change of pace."

A REMINDER: Your log reports are a valued part of this column. Although it usually isn't possible to use *every* log submitted we always try to get in at least a few loggings from everyone who reports. We only ask that you list your catches by country, add your last name and state abbreviation after each item and leave us some room to cut them apart for sorting. Following these few guidelines saves us a lot of frustration and makes things go much more smoothly.

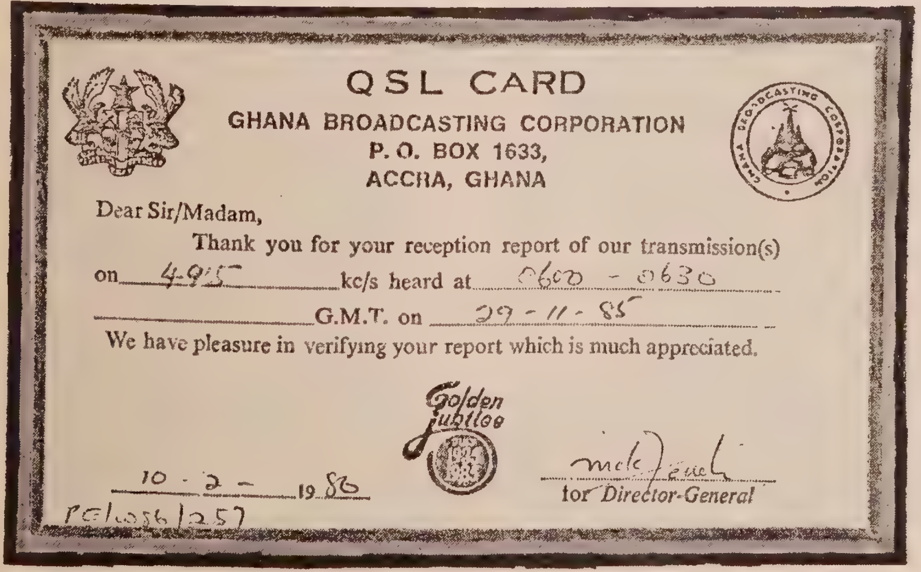
We also always welcome your letters, comments and questions. Items we can use for illustrations, such as spare QSL cards or photos of you and your shack are much appreciated. So are news clippings about shortwave, station schedules, brochures and so on. We regret that time constraints don't allow us to reply to every letter or log report received but, rest assured, your input and support is very much appreciated!

Here are this month's logs. Broadcast language is English except where noted otherwise as SS (Spanish), FF (French), AA (Arabic), etc. All times are in UTC.

Albania: Radio Tirana, 6080 at 1930 in Croatian. (Liagas, Nigeria) 9580 at 0230 with news and music. (Pelliciari, CT)

Argentina: Radio Continental, 9115 USB with vocals, announcements and ID 0020-0026, all in SS. (Paszkiewicz, CT)

Australia: Radio Australia, 9580 and 9710 at 0827, 9660 at 0741 and 21740 at 0700. (Martin, OR) 11990/



QSL CARD
GHANA BROADCASTING CORPORATION
P. O. BOX 1633,
ACCRA, GHANA

Dear Sir/Madam,

Thank you for your reception report of our transmission(s) on 4915 kc/s heard at 0600 - 0630 G.M.T. on 29-11-85

We have pleasure in verifying your report which is much appreciated.

Golden Jubilee

10-2-1986

for Director-General

PG/W56/257

The Ghana Broadcasting Corporation is a frequent visitor on 60 meters. Look for it on 4915, with sign on just prior to 0530.

15530 in Indonesian at 2200 to 0000, 17630 at 1426. (Liagas, Nigeria/Greece) 15160 at 0526. (Carson, OK)

ABC Brisbane, 9660 at 1200 with ABC ID, news. (Story, TX)

Austria: Radio Austria International, 21490 at 1630 sign on with news and weather. (Zamora, CA)

Brazil: Radio Cancao Nova, 4825 at 0100 with announcements, ID, promos in PP. //6105 and 9675. (Paszkiewicz, WI)

Canada: Radio Canada International, 6150 at 0530, 15260 at 1812, 17820 at 1815 and 17875 at 2127. (Martin, OR) 9755//13670 at 2318 to 2330 close. (Carson, OK)

CBC, 6160 (CKZU Vancouver? editor) at 1833. (Martin, OR)

CHNX, Halifax, 6130 at 1000 with mixed music, world and local news, ID. (Story, TX)

CFRX relay CFRB Toronto, 6070 at 0426 with call-in talk show. (Carson, OK)

China: Radio Beijing, 7405//11815 at 1550 with listener's letters, ID. (Zamora, CA) 11515 at 2200 in AA, 1500 at 1645 with CC lessons and 15460 in CC at 1550. (Liagas, Nigeria) 11840 at 0425. (Carson, OK)

CPBS-1 on 7935 at 2230 in CC. (Liagas, Nigeria)

CPBS-2 11610 at 1523 in CC. (Liagas, Greece)

Xinjiang Radio (Tibet) 4735//5800 in Uighur at 1100. (Liagas, Nigeria)

Colombia: Caracol Bogota, 6075 at 0012 in SS with about Bogota, ID, commercial for American Airlines. (Paszkiewicz, WI)

Costa Rica: Radio For Peace International, 7375 at 0337 with commercial for RFPI Magazine, 0341 program "Other Americas Radio." 0506 "Voices of Our World." 13630 at 2220, "Music From Everywhere." (Carson, OK)

Adventist World Radio, 9725 at 0430, ID "Radio Mundial Adventista" and into religious music, all SS. (Carson, OK)

Cuba: Radio Havana Cuba, 5965 at 0431, 9505//11820 at 0200 sign on. (Carson, OK) 21490 at 1357. (Liagas, Nigeria)

Czechoslovakia: Radio Prague International, 7345 at 0313. (Carson, OK)

Denmark: Radio Denmark, via Radio Norway, 11865 at 0344 in Danish with EE ID. (Vaage, CA)

Ecuador: HCJB, 9745 at 0100 with "Ham Radio Today," repeated at 0300. (Vaage, CA) 21455 upper sideband, 1735, also with "Ham Radio Today." (Carson, OK)

England: BBC, 5975 (via Antigua, editor) at 0330 with "Anything Goes." (Pellicciari, CT) 17640 at 1820 with "Newsdesk" to 1828 when covered by VOA sign on in French. (Carson, OK)

Finland: Radio Finland International, 21550 at 1400 in EE, 1430 in presumed Finnish. (Liagas, Nigeria)

France: Radio France International, 11670//15300//17650 at 1035, 153//21620 in FF at 1350, 15300//17850//21620 in FF at 1139, 21580 at 1000 in FF and 21620//21685 in FF at 1000. (Liagas, Nigeria) 21770 at 1400 sign on to Africa. (Carson, OK)

Gabon: Africa No. One, 9580//17630 in FF with hi-life music to 1600, then 9580//15475. (Liagas, Nigeria)

Germany: Deutsche Welle, 13690 at 2340 in GG. (Carson, OK) 15410 in Amharic at 1434, 17760 at 1100 and 17780//21680 to the Pacific at 0930. (Liagas, Nigeria)

Radio Liberty, 15290 in RR at 1154. (Liagas, Greece)

Ghana: Ghana Broadcasting Corp., 4915 at 0530 with news. (Pellicciari, CT)

Greece: Voice of Greece, 11595//11645 at 0230, 17525 at 1245 and 15630 at 1819, the latter in Greek. (Liagas, Nigeria)

Macedonia Radio, Thessaloniki, 9935//11595 at 1400 and 1800 in Greek. (Liagas, Nigeria)

Guam: KTWR, Trans World Radio, 11650 at 1553 with "Voice of the Lord" and 11700 in CC at 1419. (Liagas, Greece)

KSDA, Adventist World Radio, 11980 in CC at 1500, EE from 1600, 13700 in EE at 1850, into RR at 1900 and 15225 in CC at 2050. (Liagas, Nigeria)

Hungary: Radio Budapest, 11910 at 0030 with news and "Update." (Carson, OK)

Iceland: INBS, 9268 Upper sideband in Icelandic at 0657 with variety of music, talk and news. Also 13856 at 2331 in Icelandic with man and woman announcers, off with IS at 2335. (Carson, OK)

India: All India Radio, 9910 at 2050, 9950 at 1810, 11800 at 1650 in Hindi, 15110 at 1650. (Liagas, Nigeria)

Iran: VOIRI, 9022 at 2215 (language?) and 15084 in AA at 1645. (Liagas, Nigeria)

Israel: Kol Israel, 9435//11605 at 0000 with sign on, ID and "Israel News Magazine." (Carson, OK) 11587 at 1005, 11605 in Greek at 2200, RR at 1620. (Liagas, Greece)

Japan: Radio Japan, 5960 (via Canada) 0153 talk on autos then "Tokyo Pop-in." (Carson, OK) 9845 at 0845 in JJ. (Liagas, Nigeria) 11865 at 1447, 1724 with "Hello From Japan." (Marlin, OR; Zamora, CA) 15325 via French Guiana at 0300. Ian McFarland with news. (Pellicciari, CT)

Lithuania: Radio Vilnius, 17690 at 2307 discussing privatization chamber music. (Carson, OK)

Madagascar: Radio Netherlands relay, 15570 at 1833 to Africa with news, Media Network. (Carson, OK)

Malaysia: Radio Malaysia, Sarawak, 4950 at 1140 with music and commentary. (Story, TX)

Radio Malaysia, Kuala Lumpur, 15295 at 1530 in Shan, 1700 in AA, 1855 in Malay. (Liagas, Nigeria)

Mali: RTV Malienne, 9634.9 at 0818 in vernacular, hi-life music, announcements. In FF at 1130. (Liagas, Nigeria)

Mauritania: RTV Mauritania, 4845 at 0630 with Koran, into AA. Music at 0700. (Story, TX)

Netherlands: Radio Netherlands, 9630 at 0031, 9715 at 0730. (Martin, OR) 9895//11660 at 2030. (Liagas, Nigeria) 13770//17505 at 1509 and 17770 at 0437. (Carson, OK)

Netherlands Antilles: Radio Netherlands Bonaire relay, 6165 at 0350 and 21685 at 1827. (Carson, OK) 9590 at 0351. (Zamora, CA)

Trans World Radio, Bonaire, 11815 at 1240 with religious program. (Carson, OK)

New Zealand: Radio New Zealand International, 9700 at 0902. (Martin, OR)

Niger: La Voix du Sahel, 9705 at 1400 closing in FF. (Liagas, Nigeria) (This frequency is never heard in North America. editor)

Nigeria: Voice of Nigeria, 7255 at 0500 with news, music. (Pellicciari, CT) 0517 with program "Morning Flight." (Carson, OK) 1440 in vernacular, 1500 in EE. (Liagas, Nigeria)

Radio Nigeria, Kaduna, with Second Program here and 9560 at 1405, 9560 off at 1459.

Northern Marianas: KHBI, 11580 at 1650 and 13625 at 1800. (Liagas, Nigeria)

KFBS, 9495 in CC to 1500. (Liagas, Greece)

North Korea: Radio Pyongyang, 9345 in Korean at 1743. (Liagas, Nigeria) 15115 at 0003 with news and commentary. (Zamora, CA)

Norway: Radio Norway, 21705 at 1600 with "Norway Today" to Africa and mideast. (Zamora, CA)

Peru: Radio Continental, 6055.3 at 0225 with ballads, ID, commercials, music, all SS. (Paszkiewicz, WI)

Radio La Merced, tentative, 6754.7 at 0345-0405 in SS with Andean music, time checks, possible ID. (Paszkiewicz, WI)

Philippines: Radio Veritas Asia, 9615 at 1458 with ID, 1500 in CC. (Zamora, CA)

FEBC, 11685 at 1341 with "Far East Forum," mailbag, "English Now" language course. (Carson, OK)

Portugal: Radio Portugal, 9600 at 0230 with news, and "Welcome to Portugal" program. (Pellicciari, CT) 0235 with news and DX program. Off 0258. (Zamora, ND) 9705 at 0230 sign on, into news. (Carson, OK)

Radio Free Europe, 7190 at 0514 in Slavic language, music, news and comment-type program. (Carson, OK)

Romania: Radio Romania International, 11940 at 0300 with IS, sign on, news. (Carson, OK)

Saudi Arabia: BSKSA on 21535 at 1802 with news in AA. (Liagas, Nigeria)

South Africa: Radio RSA, 11860 at 0400 with EE sign on, news, music. (Jacobs, AR)

South Korea: Radio Korea, 7550 in Korean at 1704. (Zaria, Nigeria) 15115 at 0002. (Martin, OR)

Spain: Spanish National Radio, 11880 at 0134 with "As Others See It," book reviews. (Carson, OK) 17870 at 2231 with DX program in SS, news at 2240. (Zamora, CA) 21595 in SS at 1200. (Liagas, Nigeria)

Sweden: Radio Sweden, 9695 at 0200. (Pellicciari, CT)

Switzerland: Swiss Radio International, 12035 at 0208 and 21695 at 1338 with new "Grapevine" program with Jessica and Richard replacing Bob and Paul. (Carson, OK) 13635 at 1930 with EE ID then into SS. (Liagas, Nigeria)

Abbreviation Used In Listening Post

AA	Arabic
BC	Broadcasting
CC	Chinese
EE	English
FF	French
GG	German
ID	Identification
IS	Interval Signal
JJ	Japanese
mx	Music
NA	North America
nx	News
OM	Male
pgm	Program
PP	Portuguese
RR	Russian
rx	Religion/ious
SA	South America/n
SS	Spanish
UTC	Coordinated Universal Time (ex-GMT)
v	Frequency varies
w/	With
WX	Weather
YL	Female
//	Parallel frequencies

Tahiti: Radio Tahiti, 11827 at 0532 with island music, 0600 ID, into news in FF. (Carson, OK)

Ukraine: Radio Kiev at 0000-0100 on 7480//9750//9800//15980//17970 to the Americas. (Liagas, Nigeria)

United Arab Emirates: UAE Radio, 17855 at 2311 very weak. Announced 9597 and 11865 not audible. (Martin, OR) 21695 at 1330. (Story, TX)

Voice of the UAE, 13605 at 2340, "Scientific Facts" and "The Holy Koran: Purpose of the Mountains." Into AA at 2356. (Carson, OK)

United States: WSHB, 9455 at 0400 news, "Monitor Radio." (Pellicciari, CT)

KVOH, 9785 at 0450, Dr. Gene Scott and sermon. (Carson, OK)

WHRI, 13760 at 2352 religious program to frequency close at 2358, switch to 31 meter band. 17830 at 2200 sign on, into religion. (Carson, OK)

WRNO, 7355 at 0027, "Let's Talk Sports." (Carson, OK)

USSR: Radiostansiya Rodina, 9470 at 1000, 9790 2100-2200 and 21825 at 1225, all in RR. (Liagas, Greece)

Radio Moscow, 4765 (via Cuba) at 0158 in SS. 11850 at 0240 to North America. (Carson, OK) 12050//15405//15425//15580//15595 at 1927 in African service. (Martin, OR) 15500 at 2100 with news. (Pellicciari, CT)

Vatican: Vatican Radio, 9615 at 0228 in FF, IS, ID, news. (Carson, OK) 0300 with religious news. (Zamora, CA)

Venezuela: Radio Nacional de Venezuela, 9540 at 1140 in EE, into FF at 1150. (Story, TX) 0323 in SS, into EE at 0336. (Carson, OK)

Radio Rumbos, 4970 in SS at 0320. (Story, TX)

Ecos del Torbes, 4980 from 0100 tune, in SS. (Story, TX)

Vietnam: Voice of Vietnam, 15010 at 1602 in EE, 1650 in RR, 2300 in VV. (Liagas, Nigeria) 1614 with ID, Vietnamese music, ID and off at 1626. Also 2347 with news, off at 2357. (Zamora, ND)

Many thanks to the following reporters this month:

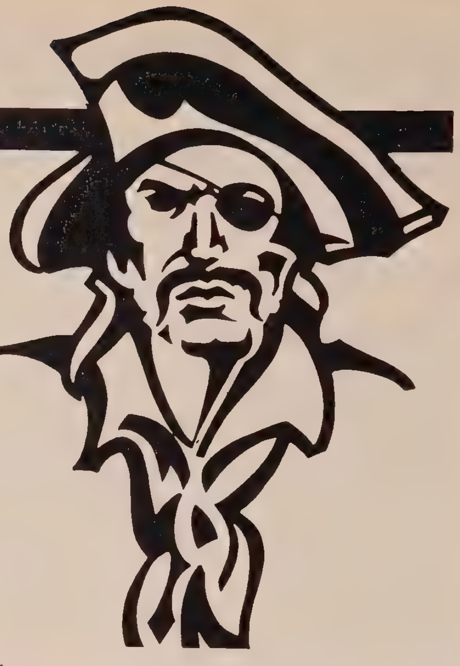
Thomas Jacobs, Rogers, AR; Jerry Martin, Salem, OR; Zacharis Liagas, Thessaloniki, Greece and Lagos, Nigeria; Sheryl Paszkiewicz, Manitowoc, WI; Kevin Story, Midland, TX; John Spencer Carson, Jr., Norman, OK; Steve Pellicciari, Norwalk, CT; Larry Zamora, Highland, CA; and Bjorn F. Vaage, Granada Hills, CA.

Until next month, good listening! ■

PIRATES DEN

BY EDWARD TEACH

FOCUS ON FREE RADIO BROADCASTING



There's been another sighting of the rarely active **Voice of Tomorrow**. William Schmitz in Delaware found this part pirate, part clandestine station on 7410 at 0007, although it was broadcasting just its unique interval signal—the drum beat and the howling wolf. William says the transmission ended abruptly at 0011 due to "transmitter problems." He heard them again, at 0120, this time on 6240 with political talks, closing theme "Tomorrow Belongs to Me" and off at 0232. This station, with its white supremacist line, is active only a couple of times a year. 6240 and 7410 are the frequencies to watch. Reports go to P.O. Box 314, Clackamas, OR 97015.

Another Schmitz logging was **WHO** at 0150 on 7415 playing Weird Al Yankovich and airing humorous commercials. The show was hosted by "The Doctor" who announced the Wellsville, NY address.

William A. Rake, III in Pennsylvania had **He-Man Radio** on 7415 at 0030, giving the Blue Ridge Summitt address.

Several noted broadcasts from **Action Radio**. Pat Murphy of Virginia found them at 0001 on 7415 doing a Star Trek bit and featuring rock music with announcers A.J. Michaels and Dave Edwards. They offered a special 1991 QSL for reports to the Wellsville address. Brad Hudgins, of Virginia, heard them at 2319 with pop and oldies, fake commercials and short comedy skits.

Murphy heard **Hope Radio International** on 7368 at 0033-0056, playing Led Zeppelin with announcer Phil Muskk "of KNBS fame" and a commentary entitled "Demand Free Radio." Pat says there were a lot of requests from listeners in New York and "NM" (New Mexico, Pat?). The station asked listeners to write in with their suggestions and announced addresses in New York and Pennsylvania. Joshua Wilkes of Kentucky had them on 7412 at 0058-0155 with a broadcast from an "underground bunker" where "M.J. and the gang are hiding from WYMN."

Wilkes heard the **Voice of Bono**, via Hope Radio's transmitter. Bono came on just after Hope Radio left and apparently this was supposed to have been some kind of takeover of Hope Radio. Bono played cuts by David Bowie and gave the Baltimore address. Hope Radio returned later and the Radio Animal gave a speech about the FCC and shortwave mode changes.

Another Wilkes log was **Radio Repulso** on 7420 at 0049-0059, running Barry Manilow and 70's nostalgia.

Joshua also had the **Voice of Anarchy** on 7411 at 0210, with a mailbag program and a claim they were broadcasting from Chicago.

CFNN (Canadian Fly By Night Radio) was heard by Chris Cuomo in Pennsylvania at 0012-0037 on 7415. The broadcast featured the Fly Brothers who claimed to be broadcasting from Tahiti, transmitting back to their friends at home in Canada. This one uses the Wellsville maildrop.

9X2V was another Wilkes logging, heard on 7413v at 0017, running big band and barbershop quartet music. This one, along with Repulso are new to this column, and as yet, I don't have any address info on them.

Still another Wilkes log was **WGAW** which he heard on 7415 at 0206 to 0240 featuring an interview with a Lebanese student, though whether real or a put-on is anyone's guess.

Pat Murphy took a log on **WORK**, which he heard at 0056-0102 on 7415. The station started with "This is a test . . . this is only a test," and then played a few minutes of music. Later, they had a WORK quiz with, Pat says, "a sexy-sounding female reading the questions." They gave a New York address and left the air abruptly.

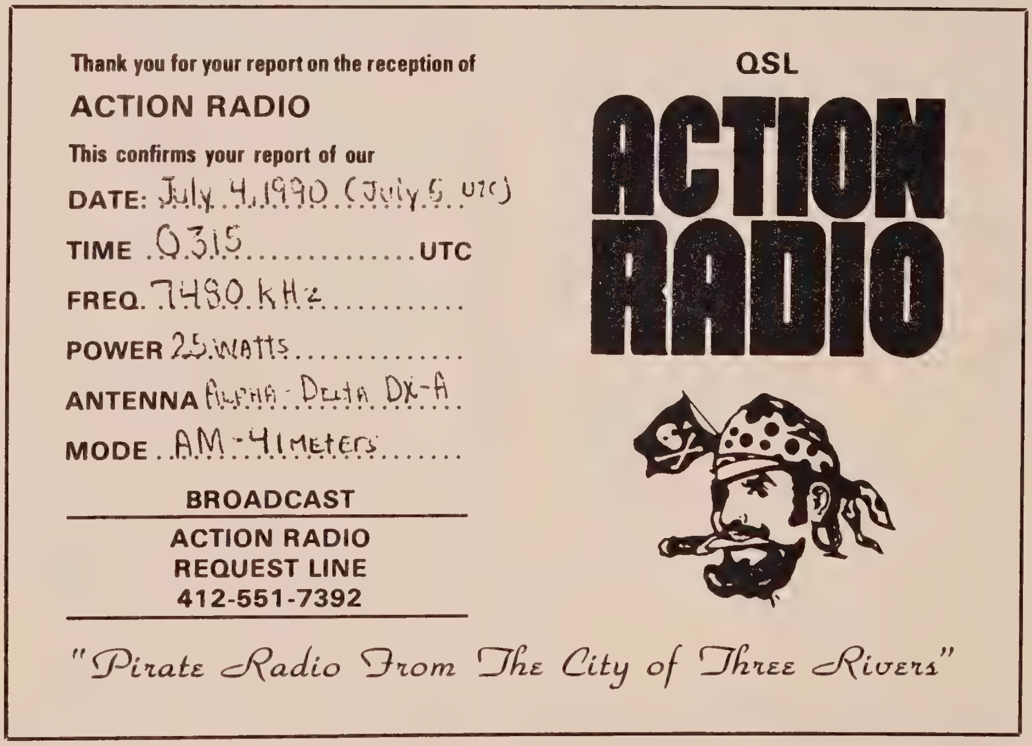
Wilkes heard **Samurai Radio**—The Voice of Oriental America—on 7415 at 0321-0347 fade out. The station signed on with an Elton John number, then a salutation to several other pirate stations. Wilkes says there were some audio problems on the broadcast.

In case you don't have them in your files, here are the specific addresses referred to earlier: Wellsville is PO Box 452, Wellsville, NY 14895. Blue Ridge Summitt is PO Box 109, Blue Ridge Summitt, PA 17214 and Baltimore is PO Box 6527, Baltimore, MD 21219.

Other stations recently active, all on or near 7415, have included WYMN, Radio Boner International, East Coast Beer Drinker, Radio Beaver, Radio Music, Secret Mountain Laboratory and WFAR-FM.

I get at least a couple of letters each month from people who are still trying to log their first pirate. Have patience and spend enough time listening to 7415, especially weekend evenings, and eventually you'll hear them!

Keep those letters coming! Your pirate station loggings, QSL information, good, clear copies of QSL's for use as illustrations and pirate news in general are always sought. If you operate a pirate station why not share some of the details with us—equipment, programming? Future plans, etc., are always of interest to pirate station listeners. ■



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ACTION RADIO

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DATE: July 4, 1990 (July 5 UTC)

TIME 0315 UTC

FREQ. 7480 kHz

POWER 25 watts

ANTENNA Alpha-Delta DX-A

MODE AM-41 meters

BROADCAST

ACTION RADIO
REQUEST LINE
412-551-7392

QSL

ACTION RADIO

"Pirate Radio From The City of Three Rivers"

Action Radio has been active again. They're promising a special 1991 QSL so this one, from 1990, probably isn't it!

WASHINGTON PULSE

FCC ACTIONS AFFECTING COMMUNICATIONS

Voice Of God Silenced

New York City Police detectives with the assistance of FCC agents, arrested two New York City residents who had allegedly been interfering with police radio communications.

Based on complaints filed by NYPD, Engineers from the FCC's New York City office, using mobile radio direction finding equipment, traced the source of the interference to the residence of Noel Wo, New York, NY. Mr. Wo who called himself the "Voice of God," challenged anyone to located him, and threatened to "blow away" anyone who tried to catch him.

Radio transmitting equipment allegedly used to transmit taunts, music and idle chatter over police emergency radio frequencies, were seized during a search of his apartment and that of a second suspect, David Yung, New York, NY. Both defendants were arrested and charged with obstructing governmental administration. Other state and federal charges are pending.

Unlicensed radio operation is a violation of Section 301 of the Communications Act of 1934, as amended. Penalties for unlicensed operation include administrative fines of up to $10,000, and criminal penalties of up to $100,000 and/or imprisonment of up to one year for a first violation. Misuse of radio frequencies is a serious offense because of its potential for interference with safety-of-life services such as aviation, marine and law enforcement.

Pirate Radio Station Raided In Venice, California

The FCC's Los Angeles Office recently raided an unlicensed FM radio station operating on 107.9 MHz in Venice, California. Based on FCC claims of numerous complaints from area residents about interference to radio and television reception, the FCC conducted an on-scene investigation. Radio operator Tom Reveille was fined $1,000 for unlicensed operation. The pirate station was called "Radio Free Venice."

Unlicensed radio operation is a violation of Section 301 of the Communications Act of 1934, as amended. Sanctions may include administrative fines of up to $10,000 and/or criminal penalties of up to $100,000 and/or imprisonment for up to one year. Misuse of radio frequencies is a serious offense because of its potential for interfering with safety-of-life services such as aviation, law enforcement and marine.

Increased Security For Electronic News Gathering

The Commission amended its rules to permit the use of digital voice ("F3Y") emission for encrypting aural communications of remote pickup broadcast stations. This will enable licensees to prevent unauthorized interception and use by third parties of intrastation communications related to newsgathering and program production.

This change was prompted by the Commission's receipt of several applications for authorization to use F3Y emission in the Remote Pickup Broadcast Service. The applicants wanted to keep communications relating to news reporting confidential until the stories could be "aired." Broadcasters maintained that, although third party reception and use of such radio signals was prohibited, the aggressive competition among news crews to be first with an exclusive news story sometimes made the extra level afforded by digital encryption technology necessary.

In a departure from the rulemaking notice, the Commission will allow stations using F3Y emission to transmit unscrambled analog or international Morse Code station identification at intervals not exceeding 15 minutes during operation, preferably using the broadcast station's Part 73 call sign. This will enable any party receiving interference to easily identify.

VHF Marine Channel 9 As A Second Calling Channel

The Commission proposed amending the Maritime Radio Services rules to permit the use of VHF marine channel 9 as a second calling frequency nationwide for private coast stations and all noncommercial vessels, such as recreational boats.

The Commission said that channel 9 would be used in addition to channel 16, which is designated as the distress, safety and calling frequency for ships and coast stations. The Commission believes that establishing an additional channel for calling will reduce congestion on channel 16 thereby increasing safety by making it easier to hear distress calls.

Ships equipped with VHF stations are required to maintain a watch on channel 16 when the station is not being used for other traffic. United States ship stations that are voluntarily equipped with a VHF station are required to maintain a watch on channel 16 when the station is turned on and not being used for other traffic. The United States Coast Guard (USCG) maintains an aural watch on channel 16, makes preliminary announcements of maritime safety broadcasts, and responds to distress calls made on the channel.

Under the proposal, channel 16 would continue to be the primary safety and distress channel used by all vessels, as well as the calling channel for use by commercial vessels. Routine calling by private coast stations and noncommercial vessels, either intership, ship to coast or coast to ship, would be permitted on channel 9. Voluntarily equipped noncommercial vessels that are currently required to monitor channel 16 would be permitted to monitor channel 9 for calling purposes.

The Commission, in conjuction with USCG, is conducting a study on the effect of using channel 9 as a second calling channel, and its effect on reducing congestion on channel 16. The Commission said that the study is being in the Boston Harbor and will be used in conjuction with comments received to assist the Commission in the final determination of this matter.

Additional Frequencies For Auditory Assistance Devices Proposed

The Commission proposed amending Part 15 of the rules by expanding the bands in which auditory assistance devices are permitted to operate. This change would improve the ability of educational institutions to meet the needs of hearing-impaired students and promote more effective use of the radio spectrum.

Auditory assistance devices consist of a microphone attached to a transmitter and an associated receiver attached to an earpiece. These devices are used to help hearing-impaired people better understand teachers, preachers and performers in places of public gathering such as classrooms, churches and auditoriums. They currently operate in the frequency bands 72-73 MHz and 75.4-76 MHz. These bands are allocated to the fixed and mobile services and are available for use under the Domestic Public Land Mobile Service. Under the Part 15 conditions for operation, auditory assistance devices may not cause harmful interference to these services and must accept any interference received.

Phonic Ear, Inc., petitioner for the change, stated that auditory assistance devices have been experiencing increasing amounts of interference due to growth in the use of its frequencies by the land mobile services. Phonic Ear said this interference has degraded the performance of auditory assistance devices to the point where some large educational institutions are now able to use them in all their classrooms.

Phonic Ear suggested that auditory assistance devices be allowed to expand to the 74.6-74.8 MHz and 75.2-75.4 MHz bands. This spectrum became available for fixed and mobile services after the two guard-bands protecting aeronautical marker beacons at 75.0 MHz were narrowed from 400 to 200 kHz on January 1, 1990.

Phonic Ear said auditory assistance devices would not experience significant interference on these frequencies because there is no existing use and any potential new services must be limited to power levels of one watt.

The Commission agreed that the possibility of interference in the expanded band would be much less than in the current band and proposed making the allocation.

Application For Ship Radio Station License

Only the Ship Radio Station License Application Form 506 dated October 1987 (and later editions) will be accepted for processing.

Earlier editions of the application form will delay the issuance of the license, since applications will be returned without action, along with a request to refile on a current form.

For further information, contact the Consumer Assistance Branch, Private Radio Bureau, Gettysburg, PA 17325-7245, telephone number 717-337-1212.

Spectrum Efficiency In The Land Mobile Radio Bands Below 470 MHz

In order to meet tomorrow's demand for more reliable and diverse communications services, the Commission initiated a Notice of Inquiry to explore options for promoting more effective and efficient use of the bands below 470 MHz by Private Land Mobile Radio (PLMR) licensees.

The Noticed is the culmination of a comprehensive review of the regulatory structure governing the PLMR services in these bands. The Notice thus serves as a vehicle for developing a full record in the myriad issues associated with how this structure can be modified to promote more efficient use of these bands to help satisfy the burgeoning demand for mobile communications.

The evidence suggests that the PLMR bands below 470 MHz are extremely congested in many areas of the country. As a result, communications on PLMR bands in these areas are unreliable and of low quality. The evidence reviewed also suggests that congestion will worsen significantly due to rapidly increasing demand for mobile communications. These bands, moreover, without significant regulatory change, will not support non-traditional mobile applications such as data, FAX, and video.

The Notice, therefore, seeks information to determine what rules and policies need to be modified to best spur widespread investment in spectrum efficient equipment in these bands to meet current and future user needs. Accordingly, the Notice focuses on two major areas. First, the Commission asked that commenters address changes in its technical standards to permit, facilitate and promote advanced communications techniques. The primary message of the technical section is that many advanced technologies, such as centralized trunking, spread spectrum and digital multiple access techniques have been, or soon will be, developed that can be applied to these bands. A change in the technological base can improve the capacity of these bands by a factor of five to ten times or more.

Second, comments are sought on regulatory policies that could be used to promote spectrum efficiency on the older PLMR bands. These policy questions largely revolve around the fact that channels on these bands are available on a shared basis only. This lack of exclusive channel assignments limits licensees' incentives and ability to become more spectrum efficient. Thus, comments are requested on possible means of introducing exclusive channel assignments in these bands.

Comments are also sought concerning other policies that might be used in conjunction with or instead of exclusive channel assignments. For example, the Commission discussed consolidating the 19 radio services, increasing the number of private carriers and charging fees to encourage use of more spectrum efficient equipment. The Commission also seeks comment on a concept called band licensing that could facilitate technologies such as spread spectrum by licensing users on entire sets of channels, rather than on individual channels. Comments on rule changes that would prohibit less efficient use of the spectrum are also requested. Finally, the Notice also seeks solutions, technological and otherwise, to the problem of unlicensed activity.

Automate Marine Coast And Aviation Ground Radio Station Licenses

The Private Radio Bureau will phase out hand typed licenses (FCC Form 452) in the Marine Coast and Aviation Ground Radio Services. Implementation of an automated licensing process was completed in August, 1991. The current license document, FCC Form 452, was replaced by a computer generated, laser printed FCC Form 452L.

For further information, contact the Privated Radio Bureau's Consumer Assistance Branch, telephone 717-337-1212.

Possible Technical Improvements In Emergency Broadcast System

The Commission initiated a proceeding to examine possible technical improvements to the Emergency Broadcast System (EBS). Allowing new technology to permit a more flexible alerting system could lead to receivers that are activated only for emergencies of a certain type or in a certain area.

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CIRCLE 2 ON READER SERVICE CARD

Specifically, the Commission has requested information in two basic areas. First, whether there is a need for an updated automatic alerting system to notify the public of the existence of an emergency condition, and if so, what type of equipment is most appropriate for this application. Secondly, if there are applications of technology that could reduce net burdens on licensees in connection with current EBS rules that would remain consistent with the objectives of the program: reliable service to the public and meeting the statutory mandates with respect to national defense.

EBS was initially designed for national security issues involving enemy attacks on the United States. In 1951, President Truman established the CONELRAD (Control of Electromagnetic Radiation) which served several functions. It modified the normal use of broadcasting frequencies so as to deny direction-finding navigation information to attacking bombers; provided means for the President to address the American people; provided attack warnings; and supplied emergency information.

The present EBS system evolved from CONELRAD as the perception of a manned bomber threat homing on broadcast stations diminished and it appeared reasonable, and probably more reliable, to allow broadcasters to transmit on their normal frequencies during an emergency.

In 1975 two significant changes were made to EBS. First, the CONELRAD alerting system was replaced with a 20-25 seconds two-tone signal which is much more reliable. Second, an agreement was signed between the FCC, its National Industry Advisory Committee, the Federal Emergency Management Agency (FEMA), and the National Oceanic and Atmospheric Administration to permit parts of the EBS system to be used for state and local emergencies.

The Commission is inquiring whether it is desirable to replace or supplement the present tone alerting system with a more sophisticated system that can convey to receiver circuitry the nature and area of the emergency. Such an alerting system could trigger automatic receivers relevant to a particular location.

Two basic alternative systems are possible: using the inband audio to convey the alerting information, as in the present two-tone alerting system, or using a non-audio-band signalling system such as an FM subcarrier. It is possible to design a new system which would allow automatic or semiautomatic initiation of an EBS transmission based on the reception of an EBS transmission. It would also be possible to have a transmission format that would allow receivers to be activated for only certain types of emergency transmissions.

The Commission pointed out that the Communications Act requires that broadcast stations be operated by a licensed operator, requires broadcasters to have a transmitter duty operator control of the transmitter when it is operating, and requires broadcasters to monitor another broadcaster for EBS activations. Rebroadcast of EBS programming has always been optional. For highly automated stations the marginal cost of traditional participation may be becoming large and this may discourage widespread participation.

Several states have explored or implemented evolutional improvements on the basic system in order to enhance its capability. There may be real benefits in creating a national framework for improved state and local EBS system. Automatic activation of EBS stations is possible with new technology. This could add a major feature to EBS, but it also poses new policy issues which need to be addressed. Automatic activation would mean that a broadcast station could be switchedd from its normal programming to EBS transmissions by an external authority.

The Commission may choose to take steps towards implementing an improved EBS alerting system. The Commission could select a specific alerting system in a rulemaking and mandate its universal use by EBS participants by a certain date. A second alternative would entail selection of a preferred system. The Commission would then encourage its implementation by broadcasters and emergency planning services, but allow the use of other systems if local requirements make them desirable. ■

Clandestine

(from page 57)

Much the same may happen with Angola and a Voz Resistencia do Galo Negro, the Unita opposition station. With Cuban troops now out of Angola it's likely the mysterious "Cubanos en Africa" station which broadcast to Cuban troops there, has gone silent.

Here are a few tips on some of the more easily heard clandestine stations you can tune for:

The Voice of Unity (anti-Afghanistan) is on at 1200, 1515 and 0130 on 11490, 12230 and 15685.

Voice of Iraqi Opposition (formerly the Voice of Free Iraq) currently at 1100-0000 on 9570, 15600 or 15605 and 17960.

Radio Iran (anti-Iran) 9400 at 0230 sign on, or slightly earlier.

Voz Resistencia do Galo Negro, 7100 to 2330 close, sometimes earlier.

Radio Caiman (anti-Cuba) 9965, evenings.

Radio SPLA, anti-Sudan, 11710 at 1300-1400.

Radio Echo of Hope (anti-North Korea) 6348 to 1200 close.

Voice of Free Sahara (via Radio Algiers) 2200-2300, 15215.

Remember, your loggings and notes on clandestine broadcasting in general are much appreciated. That includes QSL data, news clippings, station info and so on. We can keep your name confidential if you wish. We appreciate your continued input to this column.

Until next month, good hunting! ■

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(*Excludes Cellular)

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Bearcat BC55XLT	119.99	(7.00)
Bearcat BC800XLT	249.99	(7.00)
Bearcat BC100XLT	189.99	(7.00)
Bearcat BP205/200	34.99	(*)
Bearcat BC210XLT	189.99	(7.00)
Bearcat BC-ONE	129.99	(7.00)
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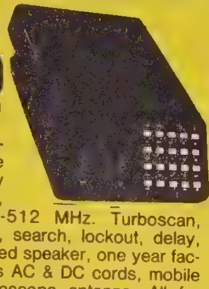

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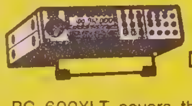

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CIRCLE 24 ON READER SERVICE CARD

Beaming In *(from page 4)*

(EIA) describes itself as a "67-year-old, Washington, D.C.-based trade organization representing all facets of electronics manufacturing." Fair enough, it's a well-respected group that does have a national voice.

But there are a few surprises at what that voice is and isn't saying. One of the official publications of the EIA is the annual edition of their publication entitled, "Consumer Electronics in Review—Entertainment and Education, Yesterday, Today, and Tomorrow." This is an attractive, statistic-filled, book promising to provide "an annually-updated profile and history of a rapidly-changing $44-plus billion industry . . ." as it was in 1990.

You can look through this book and read information on, then ogle several years worth of comparative sales stats for TV sets, VCR's, telephone devices, computers, stereos, satellite TV receivers, portable headset tape players, personal copiers, still video cameras, blank audio/video cassettes, home radios, car radios, FAX units, CB, calculators, burglar alarms, electronic watches, electronic musical instruments, toys, and ever so much more. Very impressive.

What initially struck me as odd came when I looked up CB radio. The EIA briefly outlined the history of CB, summing up its present status as deriving "much of its popularity from portable units designed for emergency use only." Say what? I question the accuracy of this statement, which isn't supported by any statistics to back it up.

Next, the EIA pronounces that CB's "most important contribution is the nationwide Highway Emergency Location Plan (HELP), whose participants constantly monitor CB Channel 9, designated as the emergency channel and reserved for SOS calls when assistance is needed on the road."

Some twenty years ago the auto industry was trying to get a project termed HELP off the ground. They said the letters HELP stood for Highway Emergency *Locating*, not Location, Plan. I never heard anything of it after that. If it ever went into operation, and presently exists, it's been the best kept secret since the names of the eleven herbs and spices in *Kentucky Fried Chicken*. Indeed, the only nationally known organization ever to have widely promoted or successfully coordinated Channel 9 monitoring efforts has been REACT. Furthermore, anybody getting on Channel 9 to send an "SOS" had better be witnessing nothing less than a Martian spacecraft landing, a personal invasion by Saddam Hussein, or Armageddon.

The CB information was my first indication that maybe this book was a big crock.

Next, I turned my attention to other sections of the book to see what the EIA had to report on scanners, ham radio, and shortwave receivers. During the last quarter of 1990, when the Gulf crisis began, sales of shortwave radios took off. In short order, you could hardly find any shortwave ("world band") portables left on the shelves in stores. It was in all the newspapers and on TV; not that you'd know it from this book.

Guess what? This book makes no specific mention at all of scanners, ham radio, nor communications receivers or shortwave portables. The "home radio" stats simply cover "table, clock, and portable" sets. Such terms are far too broad and vague to have any meaning in delineating any of these special types of radios—none of which should be tossed in with clock radios and table model AM/FM broadcast radios, anyway.

To the "trade association representing all facets of electronics manufacturing," you and I seem to be in the Twilight Zone. It's as if we didn't exist at all. The few minor scraps of information they presented on CB radio were so cock-eyed, maybe it's just as well that they overlooked everything else we're into.

Sort of makes you wonder how valid or useful a picture of the consumer electronics industry this book presents to the world, which apparently looks to the EIA for information as to what's going on.

We think this hodge-podge conglomeration of screwed-up and partial information doesn't do justice to consumer communications, the consumer electronics industry, nor to the EIA, itself. It presents an incorrect picture of consumer communications. At the very least, it implies to manufacturers considering marketing new CB, ham, scanner, and SWL products that the electronics industry's own trade association doesn't even consider there's a field here to enter. Why?

These areas of the consumer electronics industry look to have been orphaned by the EIA. Industry leaders should squawk loud enough to wake up the dozing EIA. If that doesn't bring immediate results, the companies are going to have to seriously consider forming their own trade organization. Otherwise they will always remain outsiders with nobody to tell their story.

Sources of questionable information such as this *The U.S. Consumer Electronics Industry in Review* can only do more harm than good to those thriving areas of consumer electronics that their compilers have chosen to completely ignore. Don't you agree that we deserve better from the industry's trade association?

Incidental Information

As I gather information for a feature, I come upon all sorts of interesting bits and pieces. When I've finished assembling my research into what I hope is a coherent feature, I usually end up with several assorted leftover scraps of data that just didn't seem to fit in anywhere. Invariably, I toss them out.

When I was digging up information on cordless telephones and their 46.50 to 47.00 MHz operating band, I turned up something I thought interesting, but couldn't figure out how to make it fit into the story that ran in the June *POP'COMM*. Still, it was too good to throw in the dumper, so I've decided to pass it along here on its own.

This information indicates that super secret federal intelligence units operating both inside and outside the continental US operate using frequency groups within populated areas of the spectrum. An example of this is the "Indis Group 06" allocation of 46.50 to 47.00 MHz, which is used by millions of cordless telephones.

Spread spectrum, digitally encoded (forget the encryption as it isn't needed in this mode) is the key to talking without wiping out all of those cordless phones. The only way one can tell that a transmission is taking place is to observe that the target frequency range with a spectrum analyzer and note an approximately 6 dB increase in the noise floor during transmissions. This translates to a slightly noticeable increase in the white noise level which switches up and down rather than gradually fading in and out.

How many times have you noticed this condition when talking on a cordless phone? Dwell time is in the order of 2 microseconds (which explains the 500 kHz frequency groups) and all controlling information is transmitted within each burst. This eliminates the need for a separate frequency to provide sync and hop sequence data.

However, as with all systems, there are telltale flaws in this one. All comms units have at least four "soft landing recovery points" (SLRP) within the group allocation which the transmitter and receiver land on in the event of an unrecoverable sync fault or excessively high bit error rates. Stations landing on the SLRP transmit in the clear in NFM more, operating simulcast on all assigned SLRP frequencies.

When setting up the SLRP the key to download the SLRP allocations, great care is usually taken to avoid assigned frequencies within the area of operations. With skip, operational frequencies not reported as active, new midway cordless channels going into use soon, Murphy's Law becomes a factor. Additionally, I'm sure there's a flaw in the software that designates the SLRP designations or a severe limitation in a simulcast hardware that often causes some of these frequencies to land on top of active cordless phone frequencies, CB channels, active police frequencies, and other agency repeater inputs, inc.

In any case, if you should be on your cordless and suddenly encounter strange voices attempting to "resync and return to secure mode," or advising all units to switch to another group, and the party you're talking to didn't hear those voices, then you'll know either of two things is true. Either somebody is active on Group 06 in your local area, or else the 6 meter band is wide open.

These strange voices have turned up more frequently in the 10 meter FM band and 6 meter band of late. Perhaps they are taking advantage of skip conditions, too. ■

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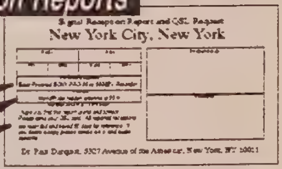
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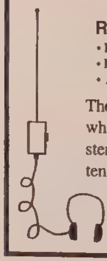

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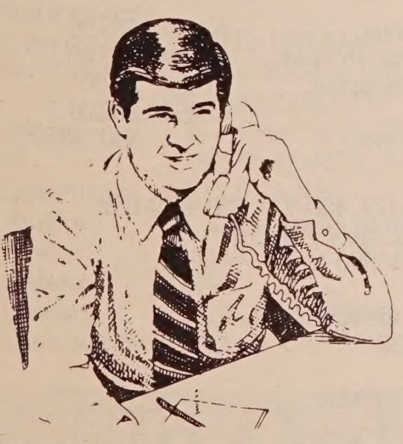

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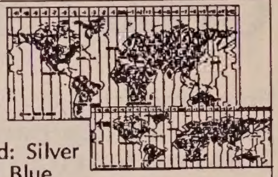

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- **DCK-1** DC cable kit for 12 volt DC use.

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• **SP-430** External speaker • **SP-41** Compact mobile speaker • **SP-50B** Mobile speaker • **HS-5** Deluxe headphones • **HS-6** Lightweight headphones

RZ-1
Wide-band scanning receiver

KENWOOD
146.970.0
99

The RZ-1 wide-band, scanning receiver covers 500 kHz-905 MHz, in AM, and narrow or wideband FM. The automatic mode selection function makes listening easier. One hundred memory channels with message and band marker, direct keyboard or VFO frequency entry, and versatile scanning functions, such as memory channel and band scan, with four types of scan stop. The RZ-1 is a 12 volt DC operated, compact unit, with built-in speaker, front-mounted phones jack, squelch for narrow FM, illuminated keys, and a ''beeper'' to confirm keyboard operation.

Optional Accessory
- **PG-2N** Extra DC cable

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